

Title: Determination Of The Design Parameters Of An
Electrolytic System For Copper Recovery And
Cyanide Regeneration For Application To Hope
Brook Gold Inc. Nfld.

By

Celec Inc.

Work on this project was conducted under the auspices of
the Department of Energy, Mines and Resources.

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EXECUTIVE SUMMARY

This report indicates that the concept of regenerating sodium cyanide by the electrolytic removal of copper from copper containing barren solution is both technically and economically feasible.

Furthermore it indicates that the required performance, to make the concept economically viable is exhibited by the electrolytic system over a wide range of copper and cyanide concentrations.

It has also been shown that the copper can be recovered in sheet form allowing the electrolytic system to regenerate the porous electrode for further use.

The use of real solution from the Hope Brook Gold Inc. property has not proved possible due to the frozen state of the heaps past the time at which the work was completed.

During the period of this contract a pilot plant was operated at two locations in the U.S.A and subsequently a system is being installed in a mill in Canada.

INTRODUCTION

HOPE BROOK GOLD INC. is developing a gold mine in southwestern Newfoundland. The gold bearing ore contains a copper mineral soluble in cyanide leach solutions. This solubility of the copper creates several metallurgical problems. The presently available solutions to these problems involve increases in the capital and operating costs of the mill.

CELEC INC. proposes to carry out testwork to investigate the design parameters for an electrolytic system that would recover copper from the cyanide leach solution and thereby reduce the capital and operating costs of the mill.

HOPE BROOK GOLD INC.

BP CANADA INC., through its subsidiary HOPE BROOK GOLD INC., is developing a gold mine in southwestern Newfoundland.

A public offering by HOPE BROOK GOLD INC. raised some \$41,000,000.00. The funds are being used to help finance the construction of an underground mine and a mill.

Feasibility studies have justified taking the property to production. Initial production will come from an open-

pit mining operation, the ore being treated by a heap-leaching process. The first revenues are expected in the third quarter of 1987.

The tonnage to be obtained from the open-pit operation is 684,000 tonnes at an average grade of around 4.5 grams per tonne.

It is proposed to mine this tonnage at a rate of 1,700 tonnes per day.

The second stage of the mining operation is planned to be carried out underground at a mining rate of 3,000 tonnes per day. The 9.6 million tonnes available, averaging the same 4.5 grams per tonne, gives the mine a further life of 9 years.

BP CANADA INC.

BP CANADA INC. is a natural resources company producing crude oil, natural gas and sulphur in the Western Canada Basin, where it has operated since 1953, and has exploration interests in the Western Canada Basin, Vancouver Island, the Northwest Territories and the Arctic Islands. It is a leader in the development of thermal recovery technology, which it is applying on a commercial scale at Wolf Lake in northeastern Alberta.

BP CANADA also has major mining and minerals activities. It operates both an underground and an open-pit mine in northwestern Quebec, producing copper, zinc, silver and gold. Other operations include limestone and lime products production in British Columbia and coal reclamation in Nova Scotia. BP CANADA explores extensively for minerals across Canada.

CELEC INC.

OROCON INCORPORATED, through its wholly owned subsidiary CELEC INC., is involved with the design, manufacture and marketing of the following electrolytic systems:-

i) Barren Recovery System.

A system to recover copper and zinc from barren cyanide solutions, thereby freeing cyanide for reuse and reducing the need for a barren bleed.

ii) Gold Recovery System.

A system to recover gold and silver directly from pregnant cyanide solutions. The system can recover the precious metals selectively from solutions containing copper and zinc.

iii) Carbon Strip System.

A system to recover gold and silver from solutions used for the stripping of activated carbon. The gold and silver could be recovered separately from any copper and zinc present in the strip solution.

OROCON INCORPORATED

Orocon Incorporated is a new company with main offices in Toronto and Vancouver and a metallurgical testing laboratory in Toronto. Orocon provides mineral process, design and turnkey plant construction to the mining industry. Our services include:

- Metallurgical testing
- Feasibility studies
- Conceptual and detailed engineering for process plants
- Complete mill construction and commissioning

- Mill operating management
- Consulting Engineering within the electrochemical industry

In addition to the more normal concept of designing and building modular and conventional plants for the owner, Orocon has a unique objective, offering the alternative of leasing complete modular mills in the size range 50 to 750 tpd to suitable properties. The construction of these mills would be financed by Orocon and leased to the project with the option of Orocon providing mill operating management. Metallurgical Testing

Orocon maintains a metallurgical testing laboratory near Toronto. The lab is fully equipped for hydrometallurgical and flotation testwork with the added capability of heap and vat leach testing. Complete assay services (fire assay and atomic adsorption) are also available.

Feasibility Studies

Orocon's principals have been involved in the preparation of feasibility studies for many projects throughout North

America. Extensive "hands on" operating experience allows the optimum approach to metallurgical process selection and preliminary plant design resulting in the most cost effective solution for any project.

Associated Mining and Geological Engineers available to Orocon enable complete mining project feasibility studies to be produced if required.

Engineering

Unlike many engineering companies, Orocon's objective is to design low cost, efficient milling plants and systems with a minimum of drawings produced and for a relatively low engineering cost. In most of the designs, good reconditioned equipment is specified for the major equipment in order to reduce plant costs and reduce construction time schedules.

Orocon develops an integrated design group around a particular project using in - house designers and contract engineers as required. This eliminates the costly overhead of many staff employees and provides for greater depth of expertise.

Mill Construction and Operation

Orocon's employees have extensive practical experience with mill construction management and operation. A list of some of these projects is shown below:

Boss Mountain, B.C.	Mill expansion from 1200 to 4000 tpd
Camlaren Mill, N.W.T.	(150 tpd gold)
Erickson Gold Mines, B.C.	(300 tpd gold)
Fondaway Canyon Project, Nevada	(500 tpd gold)
Mt. Skukum Mill, Yukon	(300 tpd gold)
Muscocho Mill, Quebec	(350 tpd gold)
Pamour Porcupine Mines, Ltd., Ont.	Major mill expansions
Magino Mill, Ontario	(400 tpd gold)
Ketza Mill, Canamax, Yukon	(400 tpd gold)
Reg Mill, Skyline Res. B. C.	(250 tpd gold)

Electrochemical Consulting

Orocon's principals have been involved in the design and pilot plant operation of electrowinning systems for the recovery of gold and silver directly from pregnant solution. Continuation of this work is expected to result in a commercial system for recovery of gold and silver from pregnant solution and in improved systems for recovery from carbon adsorption strip solutions.

There are further process advances to be made in both the base metal and uranium milling industries, by the utilization of modern electrochemical techniques and materials.

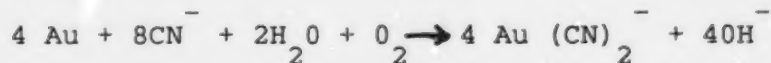
PROCESS DESCRIPTION

The initial process for recovery of the gold values from the ore at the HOPE BROOK deposit is a heap leach/carbon adsorption process.

In this process the ore is put on impermeable pads and sprayed with cyanide solution. The solution percolates through the heap, under the force of gravity, dissolving the gold by cyanidation.

The pregnant solution containing the dissolved gold is passed through columns containing activated carbon. The activated carbon contains adsorption sites which remove the gold from solution. When the carbon has been loaded with gold it is stripped using a hot alkaline cyanide solution. The gold is then electrowon from the strip solution.

The cyanidation reaction



can be rate dependent upon either the free cyanide concentration or the dissolved oxygen concentration. The dissolved oxygen is taken from the atmosphere and in practice is around 6 - 8 ppm. This is the saturated concentration of oxygen at the normal

partial pressure in the atmosphere. If no other mineral constituents affect the cyanidation reaction, either directly or indirectly by the products of decomposition or dissolution, then the rate of dissolution of gold is maximized when the amount of free sodium cyanide present reaches approximately 75 ppm.

The concentration in modern practice is usually in the range of 300 to 1,500 ppm.

Soluble constituents of the ore can influence both the cyanidation reaction and the subsequent recovery of the gold from solution.

One of the most frequent sources of trouble is the presence of copper minerals in an ore.

Although the copper content may be low the effect on both the dissolution and adsorption of gold can be pronounced.

The dissolution of copper minerals is accompanied by the production of copper cyanides. As well as the cyanide tied up in the copper complexes, cyanide is destroyed by the reduction of the cupric ions to cuprous. The cyanide is converted to cyanate in a non-reversible reaction. Each kilogram of copper dissolved will destroy 0.4

kilograms of sodium cyanide. Each kilogram of copper dissolved will be complexed with 3.1 kilograms of sodium cyanide.

Titrimetric or potentiometric procedures for the estimation of free cyanide, using silver nitrate solution, are not valid in the prescence of copper unless a correction of minus 1.55 kilogram/kilogram of copper is made.

The rate of dissolution of gold is not affected by the presence of copper as long as the ratio of total sodium cyanide (in ppm) to copper (in ppm) is kept in excess of 3.1:1.

At HOPE BROOK GOLD INC. the dissolution of copper is a problem. Testwork has shown that 180 kg/day of copper can be expected to dissolve from the 1,700 tonnes of ore to be leached daily.

PRESENT SOLUTION TO COPPER PROBLEM

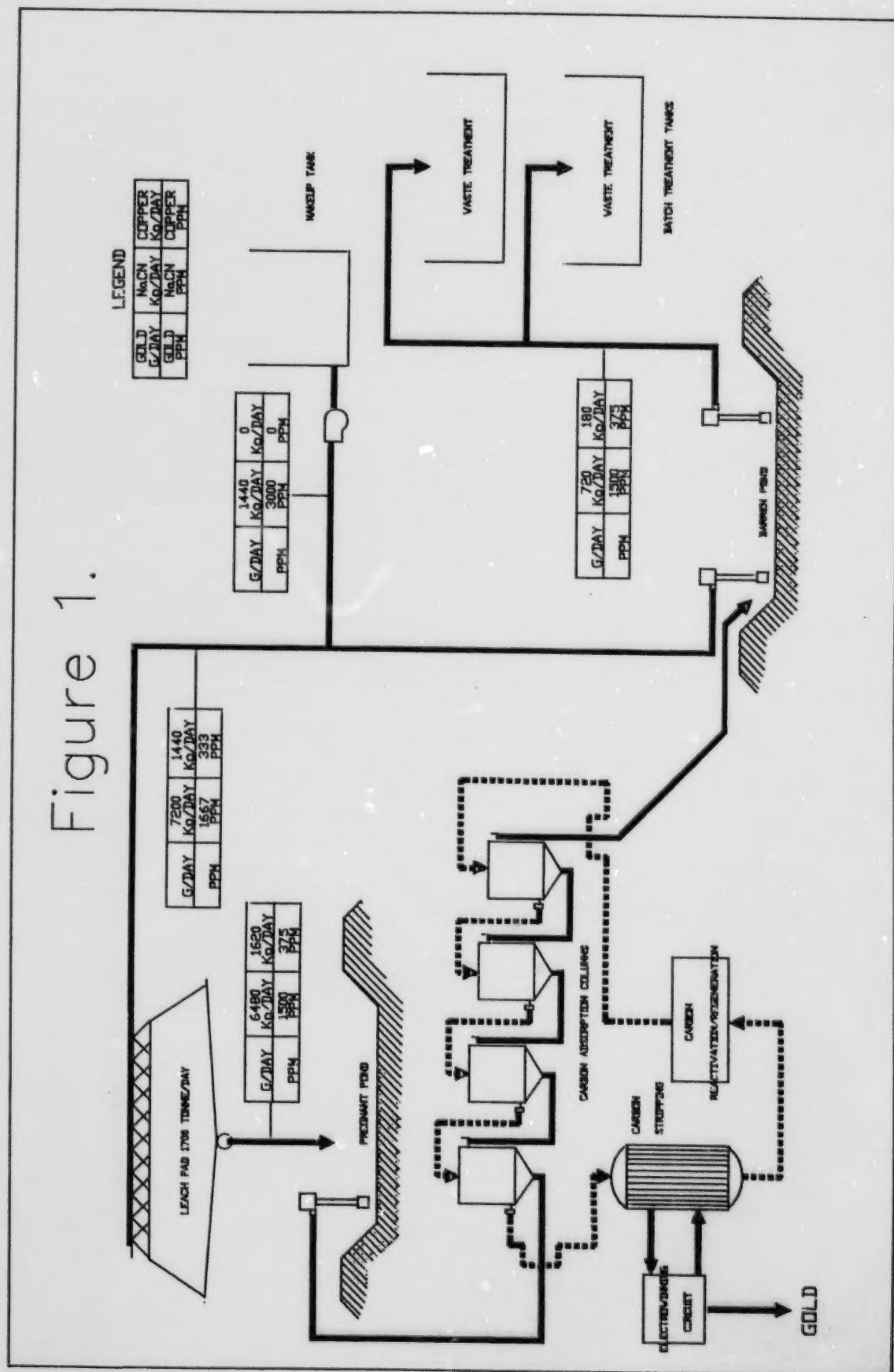
The simplified flowsheet for the HOPE BROOK GOLD INC., heap leach operation is shown in Figure 1.

At the present time, the removal of copper is to be carried out by bleeding $20M^3$ of solution per hour from the barren stream, and replacing it with fresh solution.

In order for this to be accomplished the $480M^3$ ^{3/day} of bleed solution must contain 180 kg of copper, i.e. the copper level must be 375 ppm.

The solution on being sprayed on the heap will have been diluted to 333.3 ppm of copper by makeup solution and will pick up 41.7 ppm of copper on its way through the heap. It emerges from the heap as pregnant solution containing gold and containing copper at 375 ppm.

Figure 1.



SOLUTION PARAMETERS

Total Solution Flow:	180M ³ /hr.
Barren Bleed Flow:	20M ³ /hr.
Tonnage Processing (ore):	1700 tonnes/day
Copper Dissolution:	180 kg/day
Total Sodium Cyanide Level:	1500 ppm
Copper Level of Bleed:	375 ppm
Copper Level of Pregnant:	375 ppm
Copper Level of Barren After Dilution by Makeup Solution:	333.3 ppm
Ratio of Total Sodium Cyanide to Total Copper:	4 : 1

COPPER BALANCE

Dissolution Rate/Hr: 7.5 kg.

Solution Flow/hr: 180,000 litres

.
. . Increase in copper level on passage through heap:

$$7.5 \times 10^6 / 180,000 \text{ ppm} = 41.7 \text{ ppm}$$

At the balance point, dissolution rate = removal rate

Copper Removal Rate/hr.: 7.5 kg/hr.

Bleed Rate: $20\text{M}^3/\text{hr}$

.
. . Concentration in Bleed: $7.5 \times 10^6 / 20,000 \text{ ppm} = 375 \text{ ppm}$

SODIUM CYANIDE

When the heap leach operation has reached equilibrium i.e. when the copper level has built up and the bleed stream of $20M^3$ /hr. is being treated. Then the amount of sodium cyanide being destroyed per day and having to be replaced is equal to:

$$= \frac{1,500 \times 20,000 \times 24}{10^6} \text{ kg/day}$$

$$= 720 \text{ kg/day}$$

This sodium cyanide, added to the barren makeup, and subsequently destroyed in the barren bleed, is an extra cost to the process solely due to the presence of soluble copper in the ore.

TREATMENT OF BARREN BLEED

The barren bleed, containing dissolved copper and cyanide, requires treatment before it can be disposed of to the environment or reused in the mill.

The treatment consists of oxidation of the cyanide and precipitation of the copper.

The proposed method for the oxidation of the cyanide is a hydrogen peroxide process.

OTHER METALLURGICAL EFFECTS

The presence of 375 ppm of copper in the pregnant solution has an effect on the recovery of the gold from the pregnant solution onto the activated carbon. The copper cyanide complexes blank the adsorption sites on the activated carbon, reducing the rate of adsorption and reducing the loadings of gold achievable on the activated carbon.

These effects result in a carbon adsorption system that is larger in size than that ~~that would be~~ required if the copper level was lower.

ESTIMATED EXTRA OPERATING COSTS DUE TO COPPER DISSOLUTION

PER YEAR

i)	Sodium Cyanide Destruction @ \$1.50/lb.	\$ 855,360.00
ii)	Sodium Cyanide Replacement @ \$0.45/lb.	\$ 256,600.00
iii)	Copper Precipitation @ \$0.10/lb.	\$ 14,454.00
iv)	Power @ \$0.05/kwh 10kw	\$ <u>4,320.00</u>
		\$1,130,734.00

ALTERNATIVE SOLUTION TO COPPER PROBLEM

The alternative solution is to use an electrolytic system to recover copper from the barren solution thereby reducing or eliminating the requirement for a barren bleed.

The flowsheet would then be as shown in Figure 2.

The electrolytic system described below will recycle 4 kilograms of sodium cyanide for every kilogram of copper recovered. i.e 259,200 Kg of sodium cyanide per year.

The electrolytic system described below will produce 64,800 kilograms of copper cathodes per year.

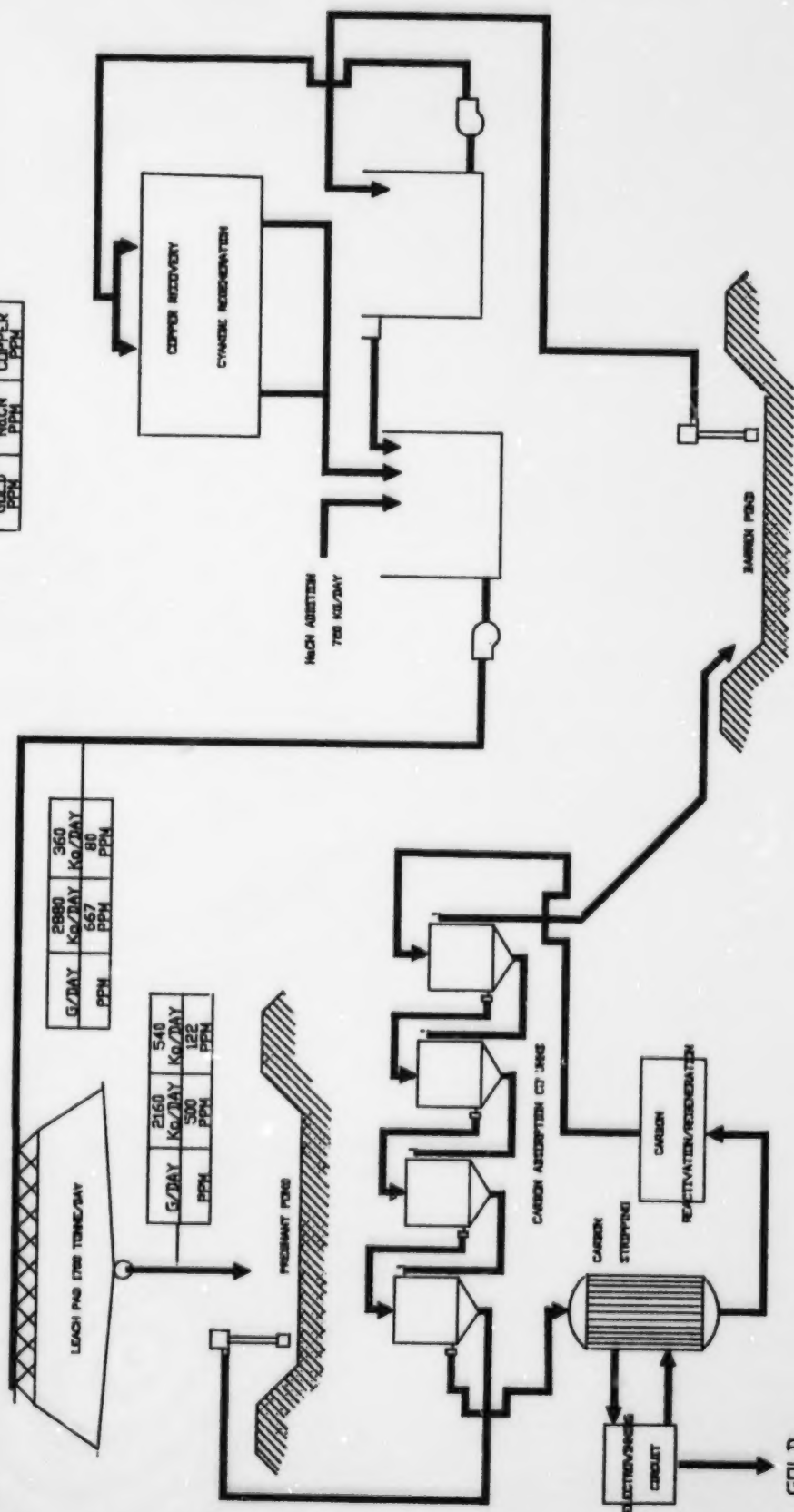
General Description

The rate of removal of copper from copper cyanide solution depends on the rate of diffusion of the electroactive species to the active electrode surface. The electroactive species is the $\text{Cu}(\text{CN})_2^-$ ion. In order for the rate of removal of the copper ion to approach that of the rate of dissolution of copper from the ore it is necessary to have a large copper concentration or to utilise a large surface area.

Figure 2.

LEGEND

GOLD	NaCN	COPPER
G/DAY	Kg/DAY	Kg/DAY
PPM	PPM	PPM



Detailed Description

Cathodes

The cathodes will be carbon felt cathodes the dimensions of which will be 100 cm by 100 cm by 1 cm thick.

The specific surface area of this felt material is $2,500,000 \text{ M}^2/\text{M}^3$. Each cathode will be able to hold approximately 5 kg of copper.

In order for the system to recover 180 kg of copper per day the cathodes in one module will require changing each 8 hr shift.

The cathodes are reusable and are stripped of their copper in the stripping cell.

Anodes

The anodes will be titanium anodes coated with tantalum, iridium, and platinum oxides. The expected operational life of the anodes is one year. Replacement costs of \$100,000.00 should be budgeted for each year of operation.

Modules

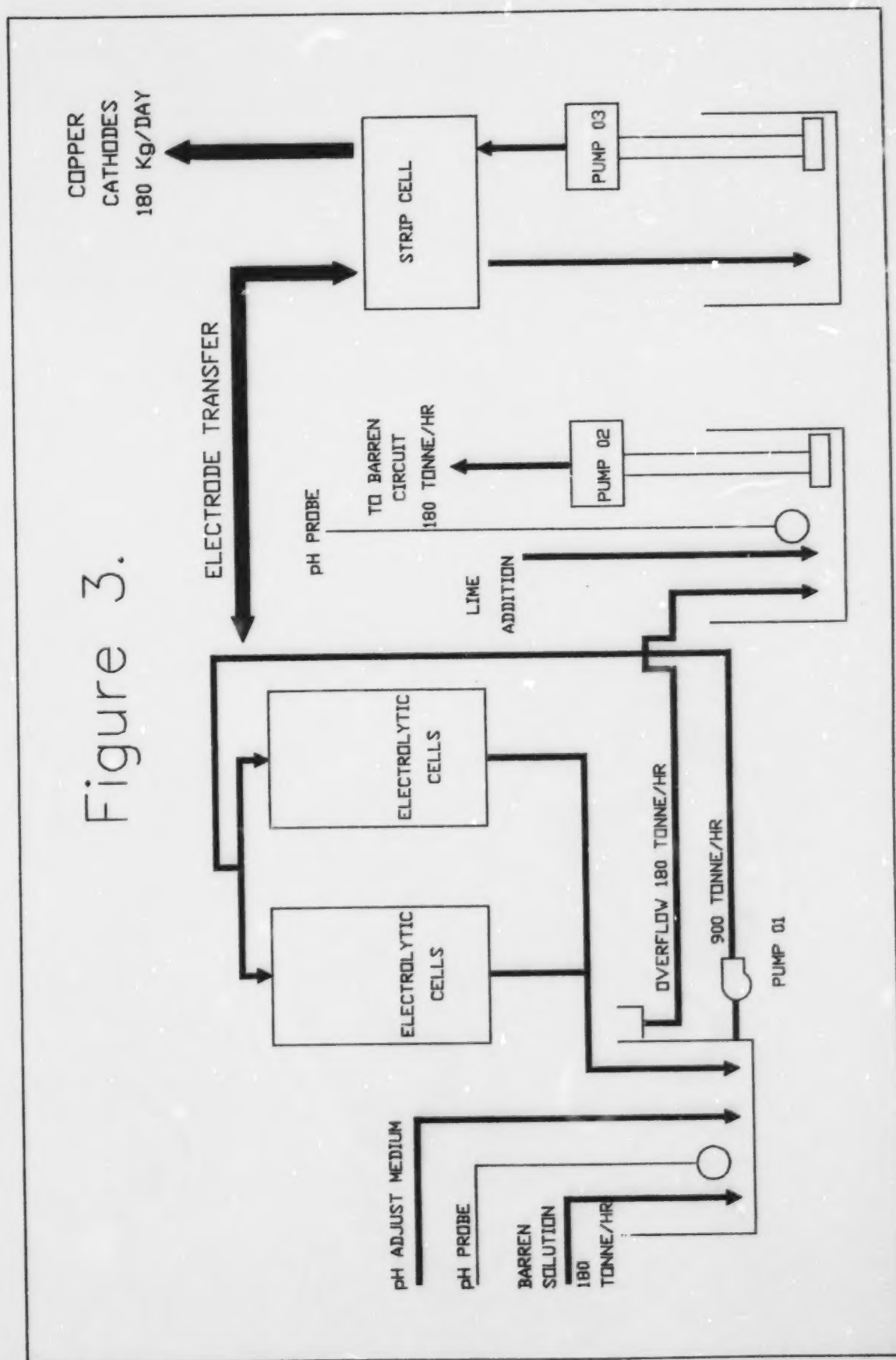
Each module will consist of a filter press type of arrangement containing two end plates with hydraulic connections, five cathodic units with a replaceable felt

pad on each face, four anodic units with spacers and gaskets on each face and two single faced anodic units for either end.

Strip Cell

The strip cell consists of a tank containing eleven starter sheets and spaces for ten felt electrodes to be stripped at the same time. The stripping of the electrodes occurs by reversing the polarity of the electrodes, making the felt electrodes the anodes and the starter sheets the cathodes. The copper on the felt dissolves in the recirculating solution and copper from the recirculating solution is electroplated onto the starter sheets. The recirculating solution has the makeup of a standard electroplating bath.

The proposed copper recovery circuit is shown in Figure 3.



CELEC INC.

COPPER BALANCE

Concentration entering heap	=	x ppm
Concentration exiting heap	=	$(x + 41.7)$ ppm
Concentration entering system	=	$(x + 41.7)$ ppm
Concentration exiting system	=	x ppm

The performance, i.e. removal rate, of the electrolytic system is directly proportional to the concentration it sees, i.e. $(x + 41.7)$ ppm. As the performance of the system is as yet unknown, the value of x is unknown. Past experience has shown that x could be as low as 80 ppm.

SODIUM CYANIDE

With the concentration of copper dropping from 375 ppm to 122 ppm the amount of sodium cyanide in solution could possibly be dropped, from 1,500 ppm to 488 ppm, without affecting the rate of gold dissolution.

As there is no longer a requirement for a barren bleed the only sodium cyanide that is destroyed requiring replacement, over and above that normally required, is that destroyed electrochemically. The expected rate of destruction is 0.25mg/Amp minute.

$$\text{i.e. } 0.25 \times 30,000 \times 60 \times 24 \text{ kg/day}$$

$$10^6$$

$$= 10.8 \text{ kg/day}$$

ESTIMATED EXTRA OPERATING COSTS DUE TO COPPER DISSOLUTION

(ALTERNATIVE SOLUTION)

	PER YEAR
Cyanide Replacement @ \$0.45/lb	\$ 3,850.00
Power @ \$0.05/kwH 180kw	\$ 77,760.00
Electrolyte	\$ 1,930.00
Anode Replacement	\$ 100,000.00
Copper Cathode Revenue @ \$0.75/lb.	\$ <u>(106,920.00)</u>
Total	\$ 76,620.00

COST COMPARISON

	PRESENT SOLUTION	ALTERNATIVE ELECTROLYTIC
Cost to Destroy Cyanide @ \$1.50/lb.	\$ 855,360	\$ -
Cost to Replace Cyanide @ \$0.45/lb.	\$ 256,600	\$ 3,850
Cost to Precipitate Copper	\$ 14,454	\$ -
Power @ \$0.05/kwh	\$ 4,320	\$ 77,760
Electrolyte	\$ -	\$ 1,930
Anode Replacement	\$ -	\$ 100,000
Copper Cathode Revenue @ \$0.75/lb	\$ -	\$ (106,920)
Total	\$1,130,734	\$ 76,620

OBJECTIVES OF THIS TEST PROGRAM

To design a system to:-

- i) Produce saleable copper cathodes
- ii) Recycle sodium cyanide

These objectives will be met by designing an electrolytic system capable of removing copper from copper containing barren cyanide solution and thereby producing copper metal sheets.

The removal of the copper from solution frees the cyanide ions that were complexed with the copper making them available for the leaching of gold and silver from the ore.

In order to design the electrolytic system, the following parameters and relationships need to be determined.

1. Cathode Material
2. Cathode Surface Area required

3. Dependence of recovery on current density
4. Dependence of recovery on free cyanide
5. Dependence of recovery on flow rate
6. Dependence of recovery on conductivity
7. Dependence of recovery on copper concentration

Due to the unavailability of real solution from Hope Brook Gold Inc., and a shortage of time the following parameters, which were quoted in the original proposal, were not investigated.

8. Effect of pH
9. Effect of temperature
10. Effect of impurities

SCOPE OF WORK

The test program reported on in the following pages was designed to determine design parameters for an electrolytic copper recovery unit for the removal of copper from barren solution at Hope Brook Gold Inc.'s property in Newfoundland.

The test procedure has been designed with the purpose of installing a recovery system as shown in Figure 2.

The recovery system proposed would be inserted to treat the recycled barren solution with the purpose of removing an amount of copper (kg/day) that would be equal to the amount of copper dissolved from the heaps (kg/day) minus copper lost by other means (kg/day). The system would not be used to treat barren bleed to remove copper and or destroy cyanide, it would be an integral part of the mill circuit acting to keep the equilibrium level of copper lower or as low as that achievable by a barren bleed.

The advantages of such a system are found in:

- 1) The lowering of costs for cyanide destruction in the barren bleed.
- 2) The removal of copper from copper cyanide complex resulting in free cyanide production and a reduction in cyanide requirements.

- 3) Lower copper levels achievable in the recycled barren solution resulting in a better performance of the gold recovery circuit.
- 4) The production of saleable copper sheet.

The increased performance (rate of removal of copper) that occurs, with such a system, when the copper level rises means that the system is self regulating.

DESIGN CONCEPT

The design concept centres around a porous electrode capable of plating copper from copper cyanide solution. The electrode is also to be reusable after removal of plated copper.

The basic information that is required for such an electrode is

- (i) The performance
 - a) Copper Removal rate
 - b) Free Cyanide generation rate
- (ii) The capacity of the electrode

PERFORMANCE

- a) By copper removal performance we mean the rate at which a unit of electrode surface can remove copper from solution. In this case we have chosen to use the measurement of

$$RR = \text{g. M}^{-2} \cdot \text{min}^{-1}$$

as a measure of performance, where RR is the grams of copper removed from solution per square metre of geometric surface area in one minute.

- b) By free cyanide performance we mean the rate at which a unit of electrode surface can produce free cyanide in solution. In this case we have chosen to use the

$$\text{CNG} = \text{g. M}^{-2} \cdot \text{min}^{-1}$$

as a measure of performance, where CNG is the grams of free cyanide generated in solution per square metre of geometric surface area per minute.

The geometric surface area is used in both cases as it is easy to measure and is directly related to the eventual design of the system. The actual electrolytically active surface area is many thousands of times greater.

CAPACITY

By the capacity of the system we mean that weight of metal that the porous electrode can plate out and retain before having its initial performance reduced by 20%. The unit of measurement chosen for this parameter is

$$Q_F = \text{Kg.M}^{-2}$$

where Q is the kilograms of plated copper per square meter of porous electrode geometric surface area; Q_F being the value of Q which results in a drop in electrode performance of 20% from the initial performance.

Performance Calculations

a) Copper Removal

$$RR = (C_{IN} - C_{OUT}) \cdot V_s / 10^2 \text{ g/M}^2/\text{min}$$

where C_{IN} is the copper concentration into the electrolytic cell in ppm.

C_{OUT} is the copper concentration out of the electrolytic cell in ppm.

V_s is the solution velocity measured perpendicular to the porous electrode in cm/min.

RR is the removal rate of copper from solution expressed as g/M²/min.

b) Free Cyanide Generation

$$CNG = (NaCN_{OUT} - NaCN_{IN}) \cdot V_s / 10^2 \text{ g/M}^2/\text{min}$$

where $NaCN_{OUT}$ is the free cyanide concentration out of the electrolytic cell in ppm.

$NaCN_{IN}$ is the free cyanide concentration into the electrolytic cell in ppm.

V_s is the solution velocity measured perpendicular to the porous electrode in cm/min.

CNG is the free cyanide generation rate expressed as grams of NaCN per M^2 per minute.

Capacity Calculation

$$Q_F = (C_s - C_F) \cdot V / A \cdot 10^2 \text{ Kg/M}^2$$

where C_s is the copper concentration of the volume V initially in ppm.

C_F is the copper concentration of volume of V finally in ppm.

$V.ml$ is the volume of solution passed that has resulted in a 20% drop in performance.

A is the geometric surface area of the electrode in cm^2 .

Q_F is the capacity of the electrode expressed as Kg/M^2

FREE CYANIDE DETERMINATION

The definition of "free cyanide" and its determination in solutions containing copper cyanide are not readily agreed upon.

The cuprous ion can combine with four CN^- ions in solution. The amount of cyanide existing as CN^- depends on the ratio of molar concentrations of copper to total cyanide, the actual molar concentration of copper and total cyanide, the PH, temperature and the presence of other ionic species.

However for the present study the important measurement is the amount of cyanide available to dissolve gold. This can then be called "free cyanide".

It has been shown by previous workers (1) that if a copper cyanide solution is titrated without dilution, by silver nitrate in the presence of potassium iodide. (in the prescribed amount) then: the concentration of "free cyanide" indicated by this titration is equal to that concentration of sodium cyanide which would have the same dissolving power, towards gold, as the copper cyanide solution.

Therefore this titration is useful in monitoring the performance of the electrolytic cell and is in fact commonly used to determine the "free cyanide" concentration of barren solutions prior to and after, sodium cyanide additions, in operating mills.

EXPERIMENTAL PROCEDURE

Plating Experiments

The experimental procedure utilised was designed to provide data under similar circumstance to those that would exist in the field.

The following points are worth noting.

- 1) Copper cyanide solutions were prepared by dissolving a known weight of solid copper cyanide (cuprous cyanide CuCN) in a sodium cyanide solution.

This method was chosen over that of e.g. mixing a copper sulphate solution with a sodium cyanide solution as the reaction



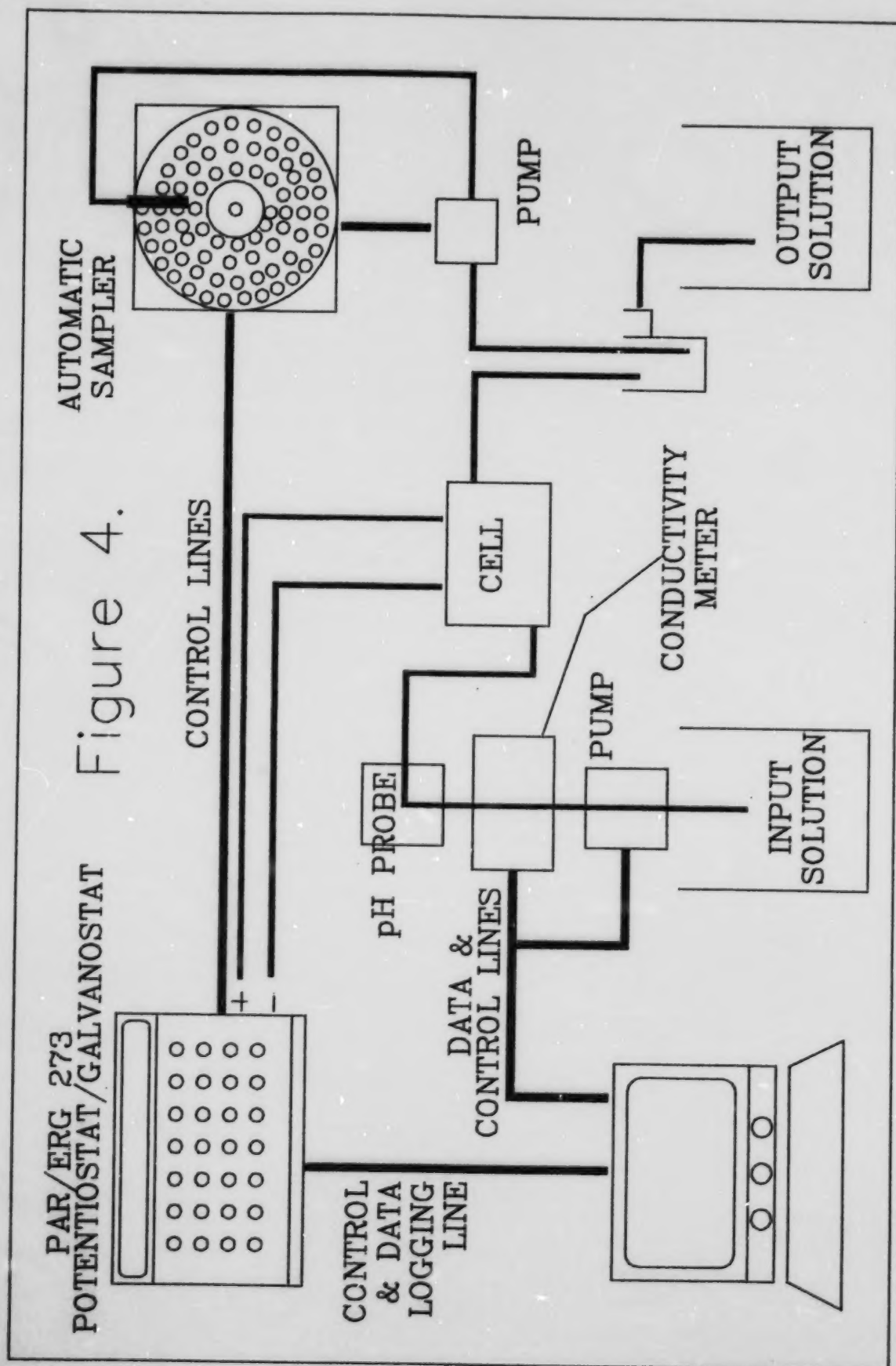
will change the amount of total cyanide present.

- 2) All experiments were single pass i.e. the solution, of known copper cyanide concentration, was passed from one tank to another via the test cell. The solution passed through the test cell once only. The output concentration was monitored.

3) Fresh electrode material was used for each experiment, except where noted.

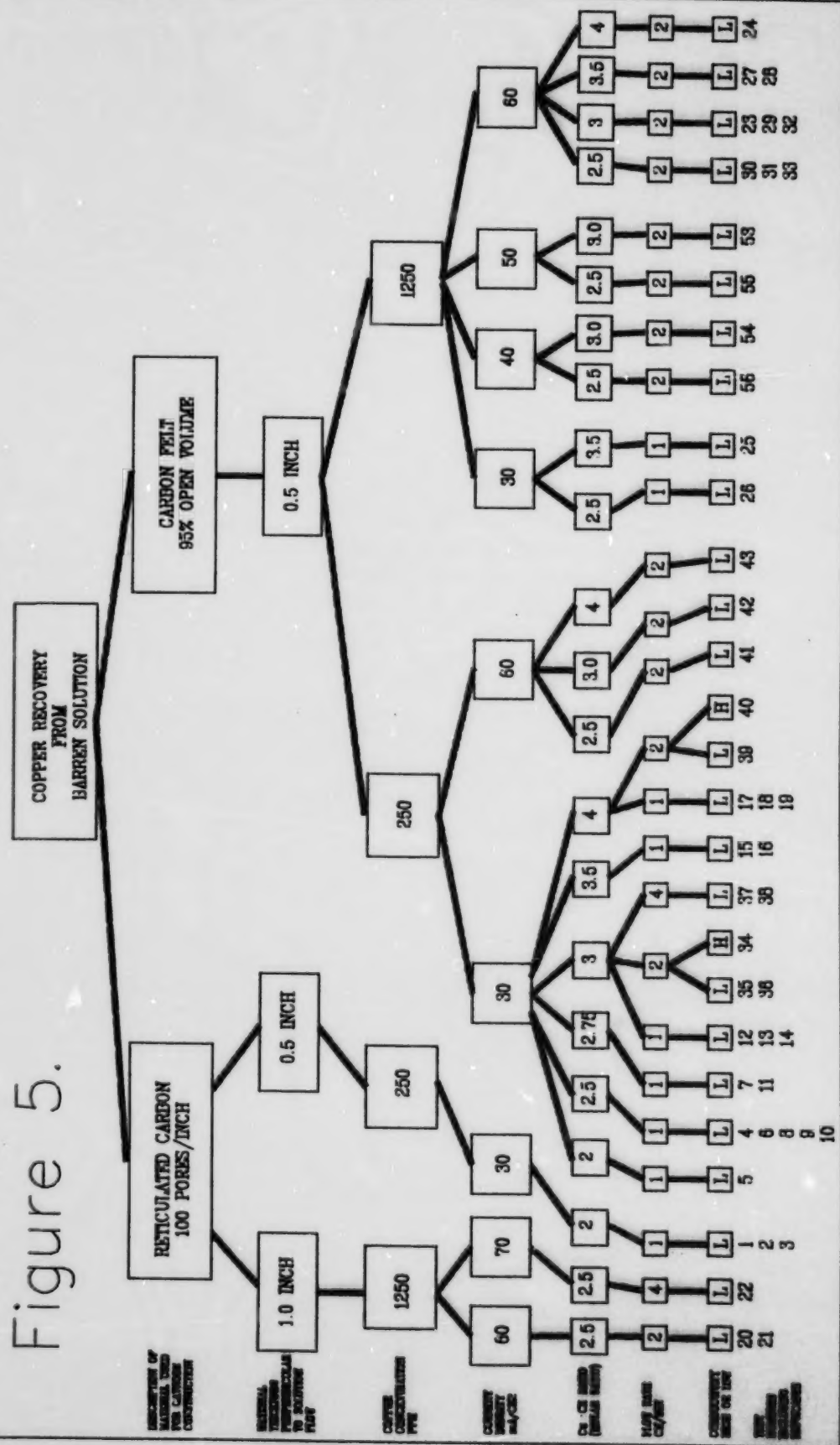
4) All sampling and experimental data were determined and logged by probes connected to a personal computer.

The experiments carried out and the parameters varied are shown in Figures 4 and 5.



PLATING EXPERIMENTS

Figure 5.



Stripping Experiments

The stripping experiments were carried out to determine the following parameter.

- i) The flow rate through the porous electrode that is required to remove the dissolved copper fast enough to prevent concentration polarization.
- ii) The cement density achievable for regulating the copper on the starter sheet in a smooth non dendritic form.
- iii) The electrode potential below which no cupric cyanide is produced at the porous electrode.

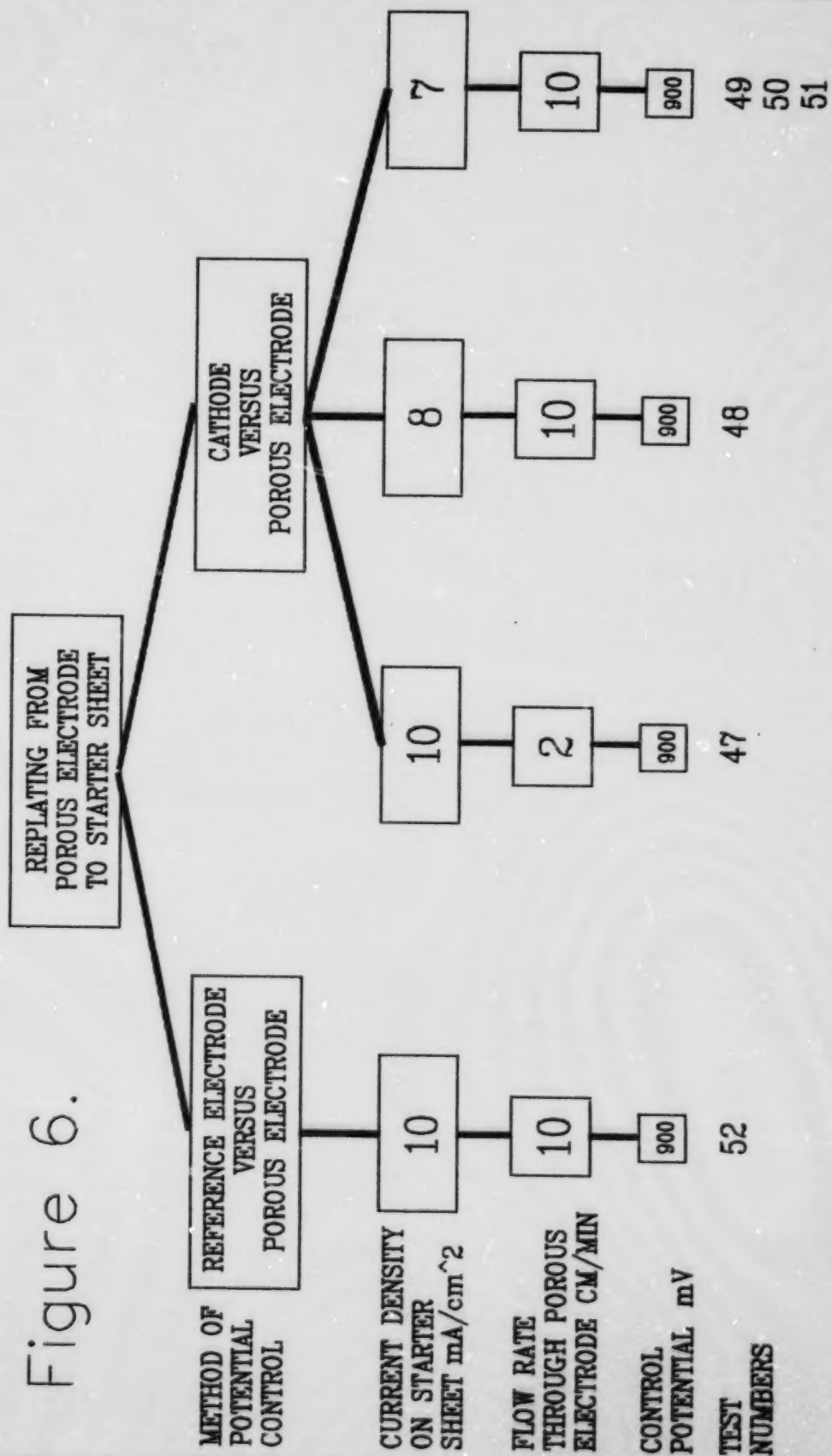
The production of cupric rather than cuprous cyanide at the porous electrode would result in destruction of cyanide in the stripping solution resulting in extra costs. The cyanide destruction occurs as shown below.



The stripping experiments and the parameters varied are shown in Figure 6.

STRIPPING EXPERIMENTS

Figure 6.



DISCUSSION OF RESULTS

TABLE I

The effect of CN:Cu molar ratio on the rate of copper recovery (carbon felt 0.5 in.); Cu= 250 mg/L; C.D.=30 mA/cm²; Flow rate= 1.0 cm/min; conductivity= low:

Test #	Flow Rate cm/min	Current Density mA/cm ²	CN:Cu Molar Ratio	Copper Removal Rate mg/cm ² /min
5.	1.00	30.00	2.48	0.147
6.	1.00	30.00	2.84	0.101
7.	1.00	30.00	3.05	0.131
8.	1.00	30.00	2.37	0.168
9.	1.00	30.00	2.88	0.136
10.	1.00	30.00	2.70	0.169
11.	1.00	30.00	2.98	0.041
12.	1.00	30.00	3.27	0.127
13.	1.00	30.00	3.27	0.121
14.	1.00	30.00	3.48	0.114
15.	1.00	30.00	3.58	0.082
16.	1.00	30.00	3.76	0.118
17.	1.00	30.00	3.91	0.085
18.	1.00	30.00	3.99	0.078
19.	1.00	30.00	3.88	0.089

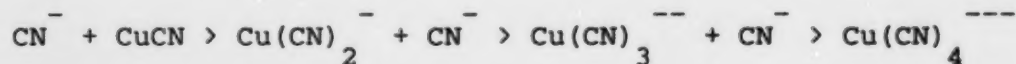
TABLE II

Effect of CN:Cu molar ratio on the copper removal rate.
Shown by data averaged from Table I.

Average CN:Cu Molar Ratio	Average Copper Removal Rate ² mg/cm /min
2.5	0.158
3.0	0.118
3.5	0.111
4.0	0.093

It would appear from the above data that the copper removal rate decreases with an increase in the CN:Cu molar ratio.

This is to be expected if the electroactive species is that of $\text{Cu}(\text{CN})_2^-$. It can be readily seen that as the amount of cyanide in solution increases the equilibrium below is pushed to the right.



This effect of a reduction in the removal rate as the CN:Cu molar ratio increases is shown again in tables III and IV.

TABLE III

Test #	Flow Rate cm/min	Current Density ² mA/cm	CN:Cu Molar Ratio	Copper Removal Rate ² mg/cm ² /min
34.	2.00	30.00	3.26	0.163
35.	2.00	30.00	3.14	0.180
36.	2.00	30.00	3.04	0.148
39.	2.00	30.00	4.00	0.064
40.	2.00	30.00	4.00	0.098

TABLE IV

Test #	Flow Rate cm/min	Current Density ² mA/cm	CN:Cu Molar Ratio	Copper Removal Rate ² mg/cm ² /min
41.	2.00	60.00	2.76	0.207
42.	2.00	60.00	3.26	0.225
43.	2.00	60.00	4.00	0.143

TABLE V

The effect of CN:Cu molar ratio on the copper removal rate at a higher flow rate and at double the current density.

Test #	Flow Rate cm/min	Current Density mA/cm ²	CN:Cu Molar Ratio	Copper Removal Rate mg/cm ² /min
23.	2.00	60.00	3.17	0.327
24.	2.00	60.00	4.12	0.372
27.	2.00	60.00	3.87	0.330
28.	2.00	60.00	3.85	0.248
29.	2.00	60.00	3.18	0.374
30.	2.00	60.00	2.97	0.719
31.	2.00	60.00	2.94	0.656
32.	2.00	60.00	3.06	0.615
33.	2.00	60.00	2.90	0.742

The effect of an increase in the CN:Cu molar ratio can be seen from the above data to have the same effect on the copper removal rate as at lower current density and lower flow i.e. the copper removal rate is decreased.

TABLE VI

The effect of an increase in flow rate on the copper removal rate.

Test #	Flow Rate cm/min	Current Density mA/cm ²	CN:Cu Molar Ratio	Copper Removal Rate mg/cm ² /min
12.	1.00	30.00	3.27	0.127
13.	1.00	30.00	3.27	0.121
14.	1.00	30.00	3.48	0.114
35.	2.00	30.00	3.14	0.180
36.	2.00	30.00	3.04	0.148
37.	4.00	30.00	3.10	0.061
38.	4.00	30.00	3.10	0.016

From the above results it would appear that at the low copper concentration in these tests that an increase in flow rate reduces the copper removal rate. This is unexpected and has no ready explanation.

TABLE VII

The effect of an increase in current density from 30 to 60 mA/cm².

Test #	Flow Rate cm/min	Current Density mA/cm ²	CN:Cu Molar Ratio	Copper Removal Rate mg/cm ² /min
35.	2.00	30.00	3.14	0.180
36.	2.00	30.00	3.04	0.148
42.	2.00	60.00	3.26	0.225
39.	2.00	30.00	4.00	0.064
43.	2.00	60.00	4.00	0.143

The increase in current density appears to effect an increase in the copper removal rate at both low and high CN:Cu molar ratios.

This effect can also be observed in table VIII.

TABLE VIII

Test #	CN:Cu Molar Ratio	Current Density mA/cm ²	Copper Removal Rate mg/cm ² /min
53.	3.00	50.00	0.478
54.	3.00	40.00	0.437
55.	2.75	50.00	0.490
56.	2.75	40.00	0.426

The difference between the two types of electrode material can be seen in table IX below.

TABLE IX

Test #		Flow Rate cm/min	Current Density mA/cm ²	CN:Cu Molar Ratio	Copper Removal Rate mg/cm ² /min
1	Retic	1.0	30	2.33	0.102
2	Retic	1.0	30	2.28	0.070
3	Retic	1.0	30	2.24	0.089
5	Felt	1.0	30	2.48	0.147
8	Felt	1.0	30	2.37	0.168

TABLE X

Test #	CN:Cu Molar Ratio	Current Density mA/cm ²	NaCN Generation Rate Rate g/M ² /min
53.	3.00	50.00	6.67
54.	3.00	40.00	6.00
55.	2.75	50.00	7.18
56.	2.75	40.00	8.82

Plating Experiments

In order to determine the viability of a porous electrode system we must first make some assumptions about the operation of such a system.

ASSUMPTION 1.

The frequency of cycling any electrode should be no more than one a day.

This is an arbitrary assumption based on the fact that a heap leach operation or mill will be staffed by more technical /skilled labour on one shift than on the after two. The changing of the electrodes is an opportunity to examine the porous electrode.

ASSUMPTION 2.

The value of Q_F is greater than 7.5 Kg/M^2 .

This is borne out by examination of the plots of Tests #1 through #42 in Appendix A

ASSUMPTION 3.

Electrode change over takes 75 min.

These three assumptions indicate that the removal rate of copper required to fill each electrode once a day is 5.5 g/min/M^2 allowing 75 min downtime each day for electrode change over.

This value can also be expressed as $0.55 \text{ mg/cm}^2/\text{min}$.

Therefore the value of RR should not exceed 5.5 g/min/M^2 . In all instances the average value of RR does not exceed 2.25 g/min/M^2 over the period of an experiment. The conditions that are likely to be met in the Hope Brook installation are those found in Tests #5-19 and #35-38 shown in Table I, Table VI, and Table VII.

This data would indicate that a removal rate of copper of 1.4 g/min/M^2 would be a reasonable value to be obtained under these conditions.

Such a value would lead to the necessity of changing electrodes once every 4 days, leading to the size of the system to be:-

$$180,000/1.4 \cdot 60 \cdot 24 = 90 \text{ M}^2$$

The operating conditions of such a system would be:

Flow rate: 475 USGPM
Volts : 6VDC

Current: 27000 A

The cyanide regeneration measured in experiments 53 to 56 was lower than expected when compared to the amount of copper removed from solution. This is explained by two facts the deposition of copper cyanode on the anode surface and the electrooxidation of the cyanide.

The electrooxidation of the cyanide has been shown to be proportional to both the total cyanide in solution and to the copper concentration by previous work.

It is therefore safe to assume that under the conditions expected at Hope Brook that the relative proportions of cyanide that is destroyed will be the same or less.

It is therefore estimated that the amount of cyanide that is destroyed is equal to 25% of that regenerated so that the regenerated cyanide in terms of sodium cyanide has to be adjusted from a factor of 3 times the weight of copper to 2.25 times the weight of copper.

This means at Hope Brook that the amount of sodium cyanide regenerated by the removal of 180 Kg/day of copper is 405 Kg/day (891 lbs/day) not 540 Kg/day.

The estimate of amount of sodium cyanide destroyed by electrooxidation (135 Kg) is a factor of 12.5 times greater than originally estimated.

Stripping Experiments

The stripping experiments were carried out using a stripping solution formulated as a standard plating solution as used for the electopating of copper from copper cyanide solution. In fact the process is exactly similar in concept, the transferral of copper from the anode to the cathode with as little change in copper concentration in the transferral medium as possible.

The stripping should be carried out as efficiently as possible with as much of the copper entering the solution as cuprous cyanide rather than cupric cyanide in order to cut down on the destruction of cyanide brought about by the reduction of cupric to cuprous that will occur in the solution without any outside interference.

The strip solution formulation was:-

CuCN	75 g/L
NaCN	93 g/L
NaOH	30 g/L

The determination of suitable preliminary experimental parameters was carried out using carbon fibre without any copper and a stainless steel sheet plated with copper as the cathode. The data from these preliminary tests (44, 45, and 46) is not reported.

COST ESTIMATE

The capital and operating cost estimates are based on the number of kg of copper that are expected to be recovered from the circuit on a daily basis.

CONDITIONS

The Unit will operate under the following conditions:-

1. Flow rate of 2592 M³/day (2 cm/min through the electrode cloth).
2. Copper input level of 250 ppm.
3. Copper output level of 180 ppm.
4. Sodium cyanide input level of 750 ppm.
5. Sodium cyanide output level of 1000 ppm.

The plating/regeneration unit will consist of 45 double faced cathodes each double cathode containing 2 M³ of surface area.

The current density employed will be 30 mA/cm².

CAPITAL COSTS

Assumptions

1. $RR = 1.4 \text{ g/min/M}^2$
2. Expected Amount of copper recovered 180 kg/day.

The capital costs can be assumed to be directly proportional to the expected kg/day of copper recovered. The capital cost includes the copper recovery, copper stripping modules and the rectification. It does not include pumps, piping etc. installation.

CATHODES	(90)	\$ 600,000
ANODES	(50)	\$ 400,000
PRESSES	(10)	\$ 54,000
STARTERS	(50)	\$ 220,000
BUSSING		
RECTIFICATION		<u>\$ 90,000</u>
	TOTAL	<u>\$1,364,000</u>

OPERATING COSTS

The operating costs are based on the unit above. Assuming operator interaction of 16 hrs a week.

	Costs/year
Manpower	12,480
Power @ 5c/kWH	77,760
Maintenance (anodes)	100,000
Chemicals	<u>1,930</u>
TOTAL	<u>192,170</u>

REVENUES

1. Copper Sheet @ \$0.75/lb	
142,560 lbs	106,920
2. Cyanide Savings @ \$0.45/lb	
320,800 lbs	144,360
3. Reduction by 90% of cyanide destruction costs 513,200 lbs @ \$1.50/lb to destroy	769,800
4. Reduction by 90% of copper precipitation @ \$.10/lb of copper	
130,000 lbs of sludge	<u>13,000</u>
TOTAL	1,035,080

INCOME (EXPENSE)	842,910
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CONCLUSIONS

1. The copper removal rate decreases with increasing CN:Cu molar ratio.
2. The copper removal rate increases with increasing current density.
3. The carbon felt cathode has a superior performance to the reticulated carbon cathode.
4. The proposed electrolytic system is economically viable.
5. The proposed electrolytic system is technically viable.

PILOT PLANT

A pilot plant containing one plating cell and one stripping cell has operated at two locations:

1. The Bighorn Mine, Arizona.
2. Cuervo Gold Mine, Nevada.

The pilot plant cells consisted of 6 cathodes each i.e. 12 M³ each.

Varying flow rates were tried at the locations.

The concept of plating a porous electrode then recovering the metal from it onto a starter sheet was successfully demonstrated.

The unit recovered up to 100 lb/day of copper and regenerated up to 300 lb/day of sodium cyanide.

MILL

A 24 M³ commercial unit has been installed in a gold mill. The unit has been installed after a Merrill Crowe system to treat the barren from the press.

The unit is presently undergoing startup.

APPENDIX "A"

TEST # 1

ERGRTC 100ppi.10cm²,th 0.5";224ppm Cu,214 ppm CN,sat CaO;10.8 ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-14.3500	146.0
72.558	-3.0000E-01	-14.2700	146.0
108.837	-3.0000E-01	-13.9500	135.0
145.116	-3.0000E-01	-14.2000	137.2
181.395	-3.0000E-01	-14.0600	126.0
217.674	-3.0000E-01	-13.9700	116.0
253.953	-3.0000E-01	-14.0700	137.0
290.233	-3.0000E-01	-13.9600	113.0
326.512	-3.0000E-01	-13.9700	120.0
362.791	-3.0000E-01	-14.0700	120.0
399.070	-3.0000E-01	-14.0700	113.0
435.349	-3.0000E-01	-13.9600	121.0
471.628	-3.0000E-01	-14.0100	122.3
507.907	-3.0000E-01	-14.1000	127.3
544.186	-3.0000E-01	-13.9900	121.3
580.465	-3.0000E-01	-13.9400	122.3
616.744	-3.0000E-01	-14.0800	116.0
653.023	-3.0000E-01	-13.9900	137.0
689.302	-3.0000E-01	-14.0900	146.0
725.581	-3.0000E-01	-14.0800	121.3
761.860	-3.0000E-01	-14.1500	113.0
798.139	-3.0000E-01	-13.9700	113.0
834.418	-3.0000E-01	-14.1700	116.0
870.697	-3.0000E-01	-14.2900	116.0
906.976	-3.0000E-01	-14.0900	122.0
943.255	-3.0000E-01	-14.3900	122.5
979.535	-3.0000E-01	-14.1900	122.0
1015.814	-3.0000E-01	-14.4700	121.3
1052.093	-3.0000E-01	-14.4500	122.0
1088.372	-3.0000E-01	-14.5900	116.0
1124.651	-3.0000E-01	-14.6300	113.0
1160.930	-3.0000E-01	-14.6500	116.0
1197.209	-3.0000E-01	-14.6900	113.0
1233.488	-3.0000E-01	-14.7900	121.4
1269.767	-3.0000E-01	-14.7100	122.0
1306.046	-3.0000E-01	-14.5900	113.0
1342.325	-3.0000E-01	-14.6500	106.3
1378.604	-3.0000E-01	-14.6500	126.0
1414.883	-3.0000E-01	-14.5700	116.0
1451.162	-3.0000E-01	-14.6800	113.0
1487.441	-3.0000E-01	-14.6400	106.0
1523.720	-3.0000E-01	-14.5900	121.0
1559.999	-3.0000E-01	-14.6300	120.3

TEST # 2

ERCRTC 100ppi, 10.8cm², 0.5"th; 193.58ppm Cu, 181.15ppm CN, sat CaO; 10.8cm³/min.

MIN	A	V	PPM
36.279	-3.0000E-01	-13.9400	151.0
72.558	-3.0000E-01	-14.1100	143.0
108.837	-3.0000E-01	-14.0800	151.0
145.116	-3.0000E-01	-13.8700	134.0
181.395	-3.0000E-01	-14.0100	126.7
217.674	-3.0000E-01	-13.9500	126.7
253.953	-3.0000E-01	-14.0300	126.7
290.233	-3.0000E-01	-13.9400	126.7
326.512	-3.0000E-01	-14.0100	126.2
362.791	-3.0000E-01	-14.0500	117.8
399.070	-3.0000E-01	-14.0600	117.8
435.349	-3.0000E-01	-14.1600	109.4
471.628	-3.0000E-01	-14.1700	126.3
507.907	-3.0000E-01	-14.1700	117.8
544.186	-3.0000E-01	-14.0900	117.8
580.465	-3.0000E-01	-14.1500	117.8
616.744	-3.0000E-01	-13.9500	117.9
653.023	-3.0000E-01	-14.2700	117.8
689.302	-3.0000E-01	-14.2200	117.8
725.581	-3.0000E-01	-14.3600	117.8
761.860	-3.0000E-01	-14.3500	117.8
798.139	-3.0000E-01	-14.3600	117.8
834.418	-3.0000E-01	-14.6100	126.2
870.697	-3.0000E-01	-14.5600	109.4
906.976	-3.0000E-01	-14.3500	117.8
943.255	-3.0000E-01	-14.4000	126.3
979.535	-3.0000E-01	-14.5000	126.2
1015.814	-3.0000E-01	-14.6900	117.8
1052.093	-3.0000E-01	-14.6100	109.4
1088.372	-3.0000E-01	-14.8300	117.8
1124.651	-3.0000E-01	-14.5700	126.2
1160.930	-3.0000E-01	-14.8800	126.2
1197.209	-3.0000E-01	-14.8500	109.4
1233.488	-3.0000E-01	-14.9400	126.2
1269.767	-3.0000E-01	-14.9500	126.3
1306.046	-3.0000E-01	-14.9500	126.2
1342.325	-3.0000E-01	-15.0200	117.8
1378.604	-3.0000E-01	-14.8200	126.2
1414.883	-3.0000E-01	-14.7600	126.2
1451.162	-3.0000E-01	-15.0700	126.2
1487.441	-3.0000E-01	-14.9900	126.2
1523.720	-3.0000E-01	-14.8800	125.2
1559.999	-3.0000E-01	-14.9700	126.2

TEST # 3

ERGRTC 100 ppi, 10.8cm², 0.5"th; 202ppm Cu, 185.0ppm CN, sat CaO, 10.8ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-14.5400	145.4
72.558	-3.0000E-01	-15.0300	141.4
108.837	-3.0000E-01	-14.9400	105.0
145.116	-3.0000E-01	-15.1100	125.2
181.395	-3.0000E-01	-15.1300	109.8
217.674	-3.0000E-01	-14.9500	113.1
253.953	-3.0000E-01	-15.0700	109.8
290.233	-3.0000E-01	-15.0300	117.2
326.512	-3.0000E-01	-15.2300	109.8
362.791	-3.0000E-01	-14.8800	109.8
399.070	-3.0000E-01	-15.1200	109.8
435.349	-3.0000E-01	-14.9900	109.8
471.628	-3.0000E-01	-14.9700	109.8
507.907	-3.0000E-01	-15.0300	117.6
544.186	-3.0000E-01	-14.9500	117.6
580.465	-3.0000E-01	-14.9500	117.6
616.744	-3.0000E-01	-15.0400	117.6
653.023	-3.0000E-01	-15.0300	97.0
689.302	-3.0000E-01	-15.0400	97.0
725.581	-3.0000E-01	-14.8300	97.0
761.860	-3.0000E-01	-15.1100	97.0
798.139	-3.0000E-01	-15.0100	109.8
834.418	-3.0000E-01	-15.1200	117.2
870.697	-3.0000E-01	-15.1200	109.8
906.976	-3.0000E-01	-15.3300	109.8
943.255	-3.0000E-01	-15.3500	109.8
979.535	-3.0000E-01	-15.2900	109.8
1015.814	-3.0000E-01	-15.4400	109.8
1052.093	-3.0000E-01	-15.1900	113.1
1088.372	-3.0000E-01	-15.3200	109.8
1124.651	-3.0000E-01	-15.4900	113.1
1160.930	-3.0000E-01	-15.5300	109.8
1197.209	-3.0000E-01	-15.7300	113.1
1233.488	-3.0000E-01	-15.5400	117.2
1269.767	-3.0000E-01	-15.8700	113.1
1306.046	-3.0000E-01	-15.8100	121.2
1342.325	-3.0000E-01	-15.8700	121.2
1378.604	-3.0000E-01	-15.8300	117.6
1414.883	-3.0000E-01	-15.9900	117.6
1451.162	-3.0000E-01	-15.8700	121.2
1487.441	-3.0000E-01	-15.9900	117.2
1523.720	-3.0000E-01	-16.1100	117.2
1559.999	-3.0000E-01	-16.1600	117.2

TEST # 7

FMAGFLT 10.8cm²,0.5"th;212.1ppm Cu,265.85 ppm CN,satCaO;10.8 ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-36.5000	111.1
72.558	-3.0000E-01	-37.6000	111.1
108.837	-3.0000E-01	-37.5500	106.1
145.116	-3.0000E-01	-38.0500	106.1
181.395	-3.0000E-01	-38.0000	111.1
217.674	-3.0000E-01	-38.5000	80.8
253.953	-3.0000E-01	-38.4500	65.7
290.233	-3.0000E-01	-38.3000	60.6
326.512	-3.0000E-01	-38.6500	70.7
362.791	-3.0000E-01	-38.1500	70.7
399.070	-3.0000E-01	-38.7500	65.7
435.349	-3.0000E-01	-38.4500	65.7
471.628	-3.0000E-01	-38.3000	60.6
507.907	-3.0000E-01	-38.0500	65.7
544.186	-3.0000E-01	-38.1000	60.6
580.465	-3.0000E-01	-38.3000	55.5
616.744	-3.0000E-01	-37.8500	65.7
653.023	-3.0000E-01	-38.0500	60.6
689.302	-3.0000E-01	-38.5500	65.7
725.581	-3.0000E-01	-39.2000	60.6
761.860	-3.0000E-01	-40.2000	65.7
798.139	-3.0000E-01	-40.6500	75.8
834.418	-3.0000E-01	-42.4000	80.8
870.697	-3.0000E-01	-42.6500	90.9
906.976	-3.0000E-01	-42.8000	85.8
943.255	-3.0000E-01	-44.0500	80.8
979.535	-3.0000E-01	-44.1500	70.7
1015.814	-3.0000E-01	-44.2500	90.9
1052.093	-3.0000E-01	-44.2500	90.9
1088.372	-3.0000E-01	-44.6000	95.9
1124.651	-3.0000E-01	-44.5500	90.9
1160.930	-3.0000E-01	-45.4000	85.8
1197.209	-3.0000E-01	-44.9000	70.7
1233.488	-3.0000E-01	-45.0500	90.9
1269.767	-3.0000E-01	-44.8000	90.9
1306.046	-3.0000E-01	-44.9500	85.8
1342.325	-3.0000E-01	-44.5500	90.9
1378.604	-3.0000E-01	-44.9000	90.9
1414.883	-3.0000E-01	-45.6500	85.8
1451.162	-3.0000E-01	-44.8000	90.9
1487.441	-3.0000E-01	-44.8500	90.9
1523.720	-3.0000E-01	-44.7000	85.8
1559.999	-3.0000E-01	-45.2500	85.8

TEST # 8

FMAGFLT 10.8 cm².0.5"th;272.7ppm Cu,316.24ppm CN,sat CaO;10.8 ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-34.7500	116.2
72.558	-3.0000E-01	-36.9500	121.2
108.837	-3.0000E-01	-38.1000	126.3
145.116	-3.0000E-01	-38.6000	141.4
181.395	-3.0000E-01	-38.6500	136.4
217.674	-3.0000E-01	-38.1000	121.2
253.953	-3.0000E-01	-38.9500	111.1
290.233	-3.0000E-01	-38.7500	111.1
326.512	-3.0000E-01	-39.5500	111.1
362.791	-3.0000E-01	-38.6500	111.1
399.070	-3.0000E-01	-39.6500	111.1
435.349	-3.0000E-01	-39.3500	111.1
471.628	-3.0000E-01	-38.5000	111.1
507.907	-3.0000E-01	-38.8000	101.9
544.186	-3.0000E-01	-38.1500	90.9
580.465	-3.0000E-01	-38.0000	90.9
616.744	-3.0000E-01	-38.4500	85.8
653.023	-3.0000E-01	-38.6500	90.9
689.302	-3.0000E-01	-39.6000	90.9
725.581	-3.0000E-01	-38.8000	85.8
761.860	-3.0000E-01	-40.0000	95.9
798.139	-3.0000E-01	-39.6500	95.9
834.418	-3.0000E-01	-39.8000	95.9
870.697	-3.0000E-01	-39.6000	101.0
906.976	-3.0000E-01	-40.6500	101.0
943.255	-3.0000E-01	-41.6500	106.1
979.535	-3.0000E-01	-41.0000	106.1
1015.814	-3.0000E-01	-40.9500	111.1
1052.093	-3.0000E-01	-41.7500	111.1
1088.372	-3.0000E-01	-41.4000	111.1
1124.651	-3.0000E-01	-41.4500	111.1
1160.930	-3.0000E-01	-41.7500	116.2
1197.209	-3.0000E-01	-41.0500	101.0
1233.488	-3.0000E-01	-41.9500	90.9
1269.767	-3.0000E-01	-41.4500	95.9
1306.046	-3.0000E-01	-41.0500	95.9
1342.325	-3.0000E-01	-41.8500	95.9
1378.604	-3.0000E-01	-41.7000	101.0
1414.883	-3.0000E-01	-42.4000	106.1
1451.162	-3.0000E-01	-42.5000	101.0
1487.441	-3.0000E-01	-42.3000	101.0
1523.720	-3.0000E-01	-42.0000	95.9
1559.999	-3.0000E-01	-41.8000	101.0

TEST # 9

FMAGFLT 10.8cm² 0.5"th;266.0ppm Cu,313.5ppm CN,sat CaO,10.8ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-34.4500	172.4
72.558	-3.0000E-01	-36.3500	182.3
108.837	-3.0000E-01	-35.8500	157.6
145.116	-3.0000E-01	-36.9500	150.3
181.395	-3.0000E-01	-37.0500	142.9
217.674	-3.0000E-01	-36.6500	150.3
253.953	-3.0000E-01	-36.9500	120.7
290.233	-3.0000E-01	-37.2000	128.0
326.512	-3.0000E-01	-37.4500	133.0
362.791	-3.0000E-01	-37.0500	108.4
399.070	-3.0000E-01	-37.5000	118.2
435.349	-3.0000E-01	-37.2500	108.4
471.628	-3.0000E-01	-38.1000	101.0
507.907	-3.0000E-01	-36.9500	96.0
544.186	-3.0000E-01	-37.7000	91.0
580.465	-3.0000E-01	-36.3000	88.7
616.744	-3.0000E-01	-37.9500	86.0
653.023	-3.0000E-01	-37.6500	81.3
689.302	-3.0000E-01	-38.0500	88.7
725.581	-3.0000E-01	-38.5000	96.0
761.860	-3.0000E-01	-38.8500	101.0
798.139	-3.0000E-01	-39.5500	98.3
834.418	-3.0000E-01	-39.7500	108.4
870.697	-3.0000E-01	-41.2500	123.2
906.976	-3.0000E-01	-42.9000	137.9
943.255	-3.0000E-01	-42.8500	142.9
979.535	-3.0000E-01	-43.2000	152.7
1015.814	-3.0000E-01	-43.2500	150.3
1052.093	-3.0000E-01	-42.4500	147.8
1088.372	-3.0000E-01	-42.0000	142.9
1124.651	-3.0000E-01	-42.5500	147.8
1160.930	-3.0000E-01	-43.3000	152.7
1197.209	-3.0000E-01	-43.2500	147.8
1233.488	-3.0000E-01	-43.6500	142.9
1269.767	-3.0000E-01	-43.2000	128.0
1306.046	-3.0000E-01	-43.7500	130.5
1342.325	-3.0000E-01	-43.7500	142.9
1378.604	-3.0000E-01	-44.0000	147.8
1414.883	-3.0000E-01	-44.5000	157.6
1451.162	-3.0000E-01	-44.3000	147.8
1487.441	-3.0000E-01	-44.0000	147.8
1523.720	-3.0000E-01	-43.0000	142.9
1559.999	-3.0000E-01	-42.8000	135.5

TEST # 10

FMAGFLT 10.8cm², 0.5"th; 294.3ppmCu, 325.08ppm CN, sat CaO; 10.8ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-39.3000	171.7
72.558	-3.0000E-01	-39.3500	171.7
108.837	-3.0000E-01	-39.7500	171.7
145.116	-3.0000E-01	-40.3000	171.7
181.395	-3.0000E-01	-40.5000	171.7
217.674	-3.0000E-01	-40.4500	161.6
253.953	-3.0000E-01	-40.8000	161.6
290.233	-3.0000E-01	-40.7000	151.5
326.512	-3.0000E-01	-40.4500	151.5
362.791	-3.0000E-01	-40.9500	141.4
399.070	-3.0000E-01	-40.0500	141.4
435.349	-3.0000E-01	-39.8000	131.3
471.628	-3.0000E-01	-39.6000	131.3
507.907	-3.0000E-01	-40.7000	131.3
544.186	-3.0000E-01	-39.8500	131.3
580.465	-3.0000E-01	-39.8500	121.2
616.744	-3.0000E-01	-40.2500	121.2
653.023	-3.0000E-01	-40.0000	121.2
689.302	-3.0000E-01	-39.9500	111.1
725.581	-3.0000E-01	-39.4500	101.0
761.860	-3.0000E-01	-38.7000	91.0
798.139	-3.0000E-01	-38.3000	81.0
834.418	-3.0000E-01	-39.1500	91.0
870.697	-3.0000E-01	-38.3500	91.0
906.976	-3.0000E-01	-35.2000	111.0
943.255	-3.0000E-01	-36.2500	121.2
979.535	-3.0000E-01	-38.8000	131.3
1015.814	-3.0000E-01	-41.5000	121.2
1052.093	-3.0000E-01	-42.0000	131.3
1088.372	-3.0000E-01	-43.1000	121.2
1124.651	-3.0000E-01	-42.5500	101.0
1160.930	-3.0000E-01	-43.0000	131.3
1197.209	-3.0000E-01	-43.3000	121.2
1233.488	-3.0000E-01	-42.3000	121.2
1269.767	-3.0000E-01	-42.3000	111.1
1306.046	-3.0000E-01	-42.3500	111.1
1342.325	-3.0000E-01	-42.8500	101.0
1378.604	-3.0000E-01	-42.8000	121.2
1414.883	-3.0000E-01	-42.8000	111.0
1451.162	-3.0000E-01	-42.9500	101.0
1487.441	-3.0000E-01	-43.4000	101.0
1523.720	-3.0000E-01	-43.6000	101.0
1559.999	-3.0000E-01	-43.1500	91.0

TEST # 11

FMAGFLT 10.8cm²2.0.5"th;252.5 ppm Cu,308 ppm CN,sat CaO,10.8 ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-46.1000	290.4
72.558	-3.0000E-01	-47.3500	265.1
108.837	-3.0000E-01	-47.6000	227.3
145.116	-3.0000E-01	-47.0500	227.3
181.395	-3.0000E-01	-46.9000	239.8
217.674	-3.0000E-01	-47.8000	239.8
253.953	-3.0000E-01	-47.9000	227.3
290.233	-3.0000E-01	-47.6500	214.6
326.512	-3.0000E-01	-46.7000	214.6
362.791	-3.0000E-01	-47.7000	202.0
399.070	-3.0000E-01	-46.7500	176.8
435.349	-3.0000E-01	-47.7500	227.5
471.628	-3.0000E-01	-47.6500	227.5
507.907	-3.0000E-01	-48.4000	227.5
544.186	-3.0000E-01	-46.8000	176.8
580.465	-3.0000E-01	-46.8500	176.8
616.744	-3.0000E-01	-47.4000	176.8
653.023	-3.0000E-01	-47.1500	151.5
689.302	-3.0000E-01	-46.1500	189.4
725.581	-3.0000E-01	-46.3500	202.0
761.860	-3.0000E-01	-47.5500	189.4
798.139	-3.0000E-01	-48.2500	202.0
834.418	-3.0000E-01	-49.7000	202.0
870.697	-3.0000E-01	-50.0500	202.0
906.976	-3.0000E-01	-51.2000	227.3
943.255	-3.0000E-01	-50.4000	202.0
979.535	-3.0000E-01	-51.8500	202.0
1015.814	-3.0000E-01	-53.2500	227.3
1052.093	-3.0000E-01	-53.1000	227.3
1088.372	-3.0000E-01	-54.3000	227.3
1124.651	-3.0000E-01	-53.0000	227.3
1160.930	-3.0000E-01	-52.8000	227.3
1197.209	-3.0000E-01	-52.6500	227.3
1233.488	-3.0000E-01	-52.9500	227.3
1269.767	-3.0000E-01	-53.1500	227.3
1306.046	-3.0000E-01	-53.0000	202.0
1342.325	-3.0000E-01	-52.6500	202.0
1378.604	-3.0000E-01	-53.2000	202.0
1414.883	-3.0000E-01	-52.3500	202.0
1451.162	-3.0000E-01	-51.7000	202.0
1487.441	-3.0000E-01	-49.1000	189.4
1523.720	-3.0000E-01	-51.2500	189.4
1559.999	-3.0000E-01	-50.9000	189.4

TEST # 12

FMAGFLT 10.8cm² 2.0.5"th;275ppm Cu,368.6ppm CN,sat CaO,10.8 ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-29.3000	168.3
72.558	-3.0000E-01	-29.5000	156.1
108.837	-3.0000E-01	-28.9500	168.3
145.116	-3.0000E-01	-29.1500	159.1
181.395	-3.0000E-01	-29.4500	162.1
217.674	-3.0000E-01	-30.5000	159.1
253.953	-3.0000E-01	-31.2500	153.0
290.233	-3.0000E-01	-31.4500	150.0
326.512	-3.0000E-01	-31.8500	150.0
362.791	-3.0000E-01	-32.7500	150.0
399.070	-3.0000E-01	-31.8500	146.9
435.349	-3.0000E-01	-31.0500	137.7
471.628	-3.0000E-01	-31.2500	131.6
507.907	-3.0000E-01	-30.8500	131.6
544.186	-3.0000E-01	-30.0000	131.6
580.465	-3.0000E-01	-31.5000	131.6
616.744	-3.0000E-01	-31.7500	128.5
653.023	-3.0000E-01	-32.1500	122.4
689.302	-3.0000E-01	-32.2000	116.3
725.581	-3.0000E-01	-32.3500	116.3
761.860	-3.0000E-01	-33.0000	122.4
798.139	-3.0000E-01	-33.3500	134.7
834.418	-3.0000E-01	-34.1500	140.8
870.697	-3.0000E-01	-34.6000	146.9
906.976	-3.0000E-01	-35.4500	153.0
943.255	-3.0000E-01	-35.3500	153.0
979.535	-3.0000E-01	-35.6000	159.1
1015.814	-3.0000E-01	-36.0500	159.1
1052.093	-3.0000E-01	-36.5000	159.1
1088.372	-3.0000E-01	-36.4500	159.1
1124.651	-3.0000E-01	-36.9500	168.3
1160.930	-3.0000E-01	-37.4000	165.3
1197.209	-3.0000E-01	-37.4500	159.1
1233.488	-3.0000E-01	-38.1000	159.1
1269.767	-3.0000E-01	-38.4500	159.1
1306.046	-3.0000E-01	-38.3500	159.1
1342.325	-3.0000E-01	-38.4500	153.0
1378.604	-3.0000E-01	-37.7500	153.0
1414.883	-3.0000E-01	-38.1500	153.0
1451.162	-3.0000E-01	-38.4500	153.0
1487.441	-3.0000E-01	-38.4500	153.0
1523.720	-3.0000E-01	-37.8500	131.6
1559.999	-3.0000E-01	-38.4500	143.8

TEST # 13

FMAGFLT 10.8 cm², 0.5"th; 275.45 ppm Cu, 368.6 ppm CN; sat CaO; 10.8 ml/min

MIN	A	V	S	PPM
36.279	-3.0000E-01	-33.6500	7.8100E-03	183.6
72.558	-3.0000E-01	-32.8000	7.8600E-03	165.3
108.837	-3.0000E-01	-32.2500	7.8900E-03	174.4
145.116	-3.0000E-01	-32.9500	7.9000E-03	169.9
181.395	-3.0000E-01	-35.1000	7.9000E-03	174.4
217.674	-3.0000E-01	-36.4500	7.9100E-03	169.9
253.953	-3.0000E-01	-36.0500	7.9200E-03	161.3
290.233	-3.0000E-01	-36.0500	7.9200E-03	142.3
326.512	-3.0000E-01	-36.2500	7.9200E-03	128.5
362.791	-3.0000E-01	-35.9500	7.9200E-03	137.7
399.070	-3.0000E-01	-36.0500	7.9400E-03	128.5
435.349	-3.0000E-01	-35.8500	7.9200E-03	114.8
471.628	-3.0000E-01	-36.9500	7.9200E-03	128.5
507.907	-3.0000E-01	-37.1500	7.9200E-03	137.7
544.186	-3.0000E-01	-37.1500	7.9100E-03	146.9
580.465	-3.0000E-01	-37.8500	7.9000E-03	137.7
616.744	-3.0000E-01	-37.6500	7.9000E-03	128.5
653.023	-3.0000E-01	-37.7500	7.9100E-03	133.1
689.302	-3.0000E-01	-38.5500	7.8900E-03	138.5
725.581	-3.0000E-01	-38.6000	7.8900E-03	133.1
761.860	-3.0000E-01	-38.3500	7.8800E-03	138.5
798.139	-3.0000E-01	-39.8000	7.8800E-03	138.5
834.418	-3.0000E-01	-40.4500	7.8700E-03	151.5
870.697	-3.0000E-01	-40.7500	7.8500E-03	174.4
906.976	-3.0000E-01	-41.2000	7.8500E-03	169.9
943.255	-3.0000E-01	-41.6500	7.8400E-03	165.3
979.535	-3.0000E-01	-41.8000	7.8300E-03	179.0
1015.814	-3.0000E-01	-41.5500	7.8300E-03	169.9
1052.093	-3.0000E-01	-41.1500	7.8200E-03	169.9
1088.372	-3.0000E-01	-41.1500	7.8300E-03	169.9
1124.651	-3.0000E-01	-41.1500	7.8300E-03	169.9
1160.930	-3.0000E-01	-41.4000	7.8200E-03	160.7
1197.209	-3.0000E-01	-41.6000	7.8200E-03	174.4
1233.488	-3.0000E-01	-42.1500	7.8200E-03	174.4
1269.767	-3.0000E-01	-42.3000	7.8300E-03	179.0
1306.046	-3.0000E-01	-42.5000	7.8400E-03	183.6
1342.325	-3.0000E-01	-42.6500	7.8200E-03	169.9
1378.604	-3.0000E-01	-43.0500	7.8100E-03	174.4
1414.883	-3.0000E-01	-41.9000	7.8200E-03	160.7
1451.162	-3.0000E-01	-41.9000	7.8200E-03	146.9
1487.441	-3.0000E-01	-42.6500	7.8100E-03	146.9
1523.720	-3.0000E-01	-41.3000	7.7700E-03	138.5
1559.999	-3.0000E-01	-42.2000	7.7000E-03	138.5

TEST # 14

FMAGFLT 10.8cm⁻², 0.5"th, 252.5 ppm Cu, 359.13ppm CN, sat CaO, 10.8 ml/min

MIN	A	V	Scm ⁻¹	PPM
36.279	-3.0000E-01	-40.0500	8.8900E-03	176.8
72.558	-3.0000E-01	-40.8500	8.9100E-03	151.5
108.837	-3.0000E-01	-41.8500	8.8800E-03	168.3
145.116	-3.0000E-01	-42.2000	8.8600E-03	143.0
181.395	-3.0000E-01	-42.6500	8.8500E-03	134.0
217.674	-3.0000E-01	-42.3000	8.8100E-03	134.0
253.953	-3.0000E-01	-42.9000	8.7800E-03	134.0
290.233	-3.0000E-01	-42.3500	8.7600E-03	134.0
326.512	-3.0000E-01	-42.8000	8.7500E-03	134.0
362.791	-3.0000E-01	-43.4500	8.7200E-03	134.0
399.070	-3.0000E-01	-42.6500	8.7100E-03	126.0
435.349	-3.0000E-01	-43.4500	8.6800E-03	126.0
471.628	-3.0000E-01	-42.7500	8.6800E-03	126.0
507.907	-3.0000E-01	-43.4500	8.6600E-03	114.8
544.186	-3.0000E-01	-43.0500	8.6400E-03	114.8
580.465	-3.0000E-01	-43.5500	8.6500E-03	114.8
616.744	-3.0000E-01	-42.8500	8.6300E-03	114.8
653.023	-3.0000E-01	-42.9500	8.6100E-03	109.4
689.302	-3.0000E-01	-44.2000	8.5800E-03	114.8
725.581	-3.0000E-01	-43.4000	8.5800E-03	126.0
761.860	-3.0000E-01	-45.2500	8.5700E-03	114.8
798.139	-3.0000E-01	-43.8000	8.5500E-03	143.0
834.418	-3.0000E-01	-45.1500	8.5300E-03	143.0
870.697	-3.0000E-01	-46.1000	8.5200E-03	143.0
906.976	-3.0000E-01	-46.4500	8.5200E-03	143.0
943.255	-3.0000E-01	-47.2000	8.5200E-03	143.0
979.535	-3.0000E-01	-46.9000	8.5200E-03	143.0
1015.814	-3.0000E-01	-46.7000	8.5500E-03	143.0
1052.093	-3.0000E-01	-47.5500	8.5500E-03	143.0
1088.372	-3.0000E-01	-47.7000	8.5600E-03	151.5
1124.651	-3.0000E-01	-48.3500	8.5200E-03	151.5
1160.930	-3.0000E-01	-47.8500	8.5000E-03	151.5
1197.209	-3.0000E-01	-49.3000	8.5100E-03	168.3
1233.488	-3.0000E-01	-48.6500	8.5400E-03	143.0
1269.767	-3.0000E-01	-49.4000	8.5500E-03	151.5
1306.046	-3.0000E-01	-48.5500	8.5600E-03	143.0
1342.325	-3.0000E-01	-49.2500	8.5700E-03	151.5
1378.604	-3.0000E-01	-48.1000	8.5700E-03	143.5
1414.883	-3.0000E-01	-48.4500	8.5800E-03	143.5
1451.162	-3.0000E-01	-48.4000	8.5600E-03	143.5
1487.441	-3.0000E-01	-48.2500	8.5600E-03	143.5
1523.720	-3.0000E-01	-48.8000	8.5600E-03	143.5
1559.999	-3.0000E-01	-49.0500	8.5400E-03	159.9

TEST # 15

FMAGFLT 10.8cm², 0.5"th, 242.4ppmCu, 355.0ppm CN, sat CaO; 10.8ml/min

MIN	A	V	Scm ⁻¹	PPM
36.279	-3.0000E-01	-43.4500	7.3000E-03	197.5
72.558	-3.0000E-01	-43.9000	7.3600E-03	182.5
108.837	-3.0000E-01	-45.0500	7.3800E-03	193.0
145.116	-3.0000E-01	-45.0500	7.3800E-03	161.0
181.395	-3.0000E-01	-47.2000	7.4000E-03	166.0
217.674	-3.0000E-01	-46.8000	7.4000E-03	175.3
253.953	-3.0000E-01	-46.5500	7.4200E-03	172.3
290.233	-3.0000E-01	-47.5000	7.4200E-03	166.0
326.512	-3.0000E-01	-47.7000	7.4000E-03	172.0
362.791	-3.0000E-01	-47.5000	7.4100E-03	152.0
399.070	-3.0000E-01	-48.1500	7.4100E-03	145.9
435.349	-3.0000E-01	-46.9500	7.4100E-03	139.8
471.628	-3.0000E-01	-44.5500	7.4000E-03	130.5
507.907	-3.0000E-01	-43.4500	7.4000E-03	145.8
544.186	-3.0000E-01	-41.7000	7.4000E-03	114.7
580.465	-3.0000E-01	-43.1500	7.4100E-03	118.9
616.744	-3.0000E-01	-45.2500	7.4000E-03	125.6
653.023	-3.0000E-01	-46.5500	7.4000E-03	128.7
689.302	-3.0000E-01	-46.6000	7.4000E-03	131.5
725.581	-3.0000E-01	-46.9500	7.3900E-03	123.4
761.860	-3.0000E-01	-45.5000	7.3800E-03	131.0
798.139	-3.0000E-01	-46.6000	7.3700E-03	141.0
834.418	-3.0000E-01	-48.7000	7.3700E-03	145.0
870.697	-3.0000E-01	-48.8500	7.3600E-03	152.0
906.976	-3.0000E-01	-51.2500	7.3300E-03	160.0
943.255	-3.0000E-01	-49.6000	7.3000E-03	175.0
979.535	-3.0000E-01	-51.3500	7.2900E-03	182.0
1015.814	-3.0000E-01	-51.7500	7.2800E-03	190.0
1052.093	-3.0000E-01	-50.5000	7.2700E-03	182.0
1088.372	-3.0000E-01	-48.8000	7.2700E-03	175.0
1124.651	-3.0000E-01	-51.0500	7.2700E-03	177.0
1160.930	-3.0000E-01	-51.1500	7.2500E-03	181.0
1197.209	-3.0000E-01	-49.3000	7.2400E-03	188.0
1233.488	-3.0000E-01	-51.1500	7.2300E-03	179.0
1269.767	-3.0000E-01	-52.7500	7.2200E-03	175.0
1306.046	-3.0000E-01	-51.6500	7.2200E-03	170.0
1342.325	-3.0000E-01	-51.8500	7.2300E-03	175.0
1378.604	-3.0000E-01	-50.6000	7.2200E-03	172.0
1414.883	-3.0000E-01	-52.6000	7.2100E-03	159.0
1451.162	-3.0000E-01	-51.0000	7.2000E-03	163.0
1487.441	-3.0000E-01	-49.7500	7.1900E-03	159.0
1523.720	-3.0000E-01	-52.2500	7.1300E-03	163.0
1559.999	-3.0000E-01	-53.6000	7.0800E-03	159.0

TEST # 16

FMAGFLT 10.8 cm² 0.5"th; 272.0ppm Cu, 418.6 CN, sat CaO; 10.8 ml/min

MIN	A	V	Scm ⁻¹	PPM
36.279	-3.0000E-01	-28.9000	7.9100E-03	156.5
72.558	-3.0000E-01	-31.3500	7.9200E-03	169.0
108.837	-3.0000E-01	-32.4500	7.9400E-03	176.0
145.116	-3.0000E-01	-33.2500	7.9400E-03	194.0
181.395	-3.0000E-01	-33.9500	7.9100E-03	219.0
217.674	-3.0000E-01	-33.8000	7.9000E-03	222.0
253.953	-3.0000E-01	-34.8000	7.8800E-03	219.0
290.233	-3.0000E-01	-34.4500	7.8600E-03	227.0
326.512	-3.0000E-01	-33.2500	7.8600E-03	201.0
362.791	-3.0000E-01	-34.7000	7.8400E-03	176.0
399.070	-3.0000E-01	-35.1500	7.8300E-03	169.0
435.349	-3.0000E-01	-36.0000	7.8200E-03	160.0
471.628	-3.0000E-01	-35.8500	7.8000E-03	161.0
507.907	-3.0000E-01	-33.8000	7.7800E-03	169.0
544.186	-3.0000E-01	-34.7500	7.7800E-03	161.0
580.465	-3.0000E-01	-36.2500	7.7700E-03	165.0
616.744	-3.0000E-01	-35.8500	7.7600E-03	163.0
653.023	-3.0000E-01	-36.2000	7.7500E-03	171.0
689.302	-3.0000E-01	-36.4000	7.7400E-03	175.0
725.581	-3.0000E-01	-35.9000	7.7400E-03	177.0
761.860	-3.0000E-01	-34.6000	7.7300E-03	169.0
798.139	-3.0000E-01	-34.6500	7.7200E-03	173.0
834.418	-3.0000E-01	-38.0500	7.7100E-03	177.0
870.697	-3.0000E-01	-39.3000	7.7000E-03	190.0
906.976	-3.0000E-01	-37.7000	7.6800E-03	194.0
943.255	-3.0000E-01	-40.0500	7.6700E-03	196.0
979.535	-3.0000E-01	-39.2500	7.6700E-03	197.0
1015.814	-3.0000E-01	-40.7500	7.6600E-03	172.0
1052.093	-3.0000E-01	-40.5000	7.6500E-03	179.0
1088.372	-3.0000E-01	-42.4500	7.6300E-03	167.0
1124.651	-3.0000E-01	-42.2500	7.6200E-03	161.0
1160.930	-3.0000E-01	-42.5500	7.6100E-03	156.0
1197.209	-3.0000E-01	-30.7000	7.6600E-03	141.0
1233.488	-3.0000E-01	-35.9000	7.6500E-03	121.0
1269.767	-3.0000E-01	-44.3500	7.6600E-03	101.0
1306.046	-3.0000E-01	-43.1500	7.6600E-03	91.0
1342.325	-3.0000E-01	-77.9500	7.6600E-03	71.0
1378.604	-3.0000E-01	-62.0000	7.6600E-03	79.0
1414.883	-3.0000E-01	-53.4500	7.6600E-03	67.0
1451.162	-3.0000E-01	-102.3500	7.6500E-03	55.0
1487.441	-3.0000E-01	-57.9000	7.6400E-03	45.0
1523.720	-3.0000E-01	-54.4000	7.6500E-03	42.0
1559.999	-3.0000E-01	-53.6000	7.6400E-03	35.3

TEST # 17

FMAGFLT 10.8 cm², 0.5"th; 257.55 ppm Cu, 412.4 ppm CN, sat CaO; 10.8 ml/min

MIN	A	V	Scm ⁻¹	PPM
36.279	-3.0000E-01	-30.4000	7.6000E-03	181.8
72.558	-3.0000E-01	-30.9500	7.6500E-03	194.4
108.837	-3.0000E-01	-31.0000	7.6700E-03	181.8
145.116	-3.0000E-01	-30.4000	7.6800E-03	176.0
181.395	-3.0000E-01	-30.5500	7.6800E-03	174.0
217.674	-3.0000E-01	-32.0500	7.6700E-03	174.0
253.953	-3.0000E-01	-30.8500	7.6700E-03	172.0
290.233	-3.0000E-01	-31.5500	7.6500E-03	176.0
326.512	-3.0000E-01	-31.6500	7.6300E-03	170.0
362.791	-3.0000E-01	-31.3500	7.6100E-03	172.0
399.070	-3.0000E-01	-31.0500	7.5900E-03	172.0
435.349	-3.0000E-01	-31.0500	7.5700E-03	174.0
471.628	-3.0000E-01	-31.5000	7.5400E-03	172.0
507.907	-3.0000E-01	-31.4500	7.5400E-03	168.0
544.186	-3.0000E-01	-31.4500	7.5300E-03	162.0
580.465	-3.0000E-01	-31.0500	7.5200E-03	160.0
616.744	-3.0000E-01	-31.4500	7.4900E-03	164.0
653.023	-3.0000E-01	-30.8000	7.4900E-03	151.0
689.302	-3.0000E-01	-30.3500	7.4700E-03	158.0
725.581	-3.0000E-01	-31.0500	7.4700E-03	162.0
761.860	-3.0000E-01	-30.4000	7.4500E-03	166.0
798.139	-3.0000E-01	-30.9500	7.4300E-03	166.0
834.418	-3.0000E-01	-31.2500	7.4300E-03	168.0
870.697	-3.0000E-01	-31.3000	7.4200E-03	172.0
906.976	-3.0000E-01	-32.8500	7.3900E-03	174.0
943.255	-3.0000E-01	-32.6500	7.3700E-03	176.0
979.535	-3.0000E-01	-33.2500	7.3500E-03	178.0
1015.814	-3.0000E-01	-33.4500	7.3300E-03	180.0
1052.093	-3.0000E-01	-33.7500	7.3200E-03	183.0
1088.372	-3.0000E-01	-34.1500	7.3200E-03	188.0
1124.651	-3.0000E-01	-34.1500	7.3300E-03	186.0
1160.930	-3.0000E-01	-34.2000	7.3300E-03	186.0
1197.209	-3.0000E-01	-34.4500	7.3300E-03	176.0
1233.488	-3.0000E-01	-34.2000	7.3400E-03	178.0
1269.767	-3.0000E-01	-34.4000	7.3200E-03	164.0
1306.046	-3.0000E-01	-34.4500	7.3200E-03	162.0
1342.325	-3.0000E-01	-34.4500	7.3300E-03	167.0
1378.604	-3.0000E-01	-34.2000	7.3400E-03	174.0
1414.883	-3.0000E-01	-34.5500	7.3600E-03	176.0
1451.162	-3.0000E-01	-34.4500	7.3600E-03	180.0
1487.441	-3.0000E-01	-34.4000	7.3800E-03	176.0
1523.720	-3.0000E-01	-34.3500	7.3700E-03	178.0
1559.999	-3.0000E-01	-34.2000	7.3400E-03	174.0

TEST # 18

FMAGFLT 10.8cm², 0.5"th; 251.13 ppmCu, 409.7 ppm CN, sat CaO; 10.8 ml/min

MIN	λ	V	Scm ⁻¹	PPM
36.279	-3.0000E-01	-32.9500	8.1100E-03	199.3
72.558	-3.0000E-01	-32.8000	8.1200E-03	185.7
108.837	-3.0000E-01	-32.7000	8.1000E-03	177.4
145.116	-3.0000E-01	-32.7000	8.0800E-03	166.5
181.395	-3.0000E-01	-32.6500	8.0700E-03	158.4
217.674	-3.0000E-01	-33.0500	8.0400E-03	155.6
253.953	-3.0000E-01	-33.2500	8.0100E-03	158.6
290.233	-3.0000E-01	-33.3000	7.9700E-03	166.5
326.512	-3.0000E-01	-32.9500	7.9300E-03	177.4
362.791	-3.0000E-01	-33.0500	7.8900E-03	177.4
399.070	-3.0000E-01	-32.7500	7.8600E-03	166.5
435.349	-3.0000E-01	-33.5000	7.8200E-03	177.4
471.628	-3.0000E-01	-32.8000	7.8000E-03	185.7
507.907	-3.0000E-01	-32.8500	7.7700E-03	177.4
544.186	-3.0000E-01	-32.9500	7.7600E-03	191.0
580.465	-3.0000E-01	-32.7000	7.7400E-03	196.5
616.744	-3.0000E-01	-32.4500	7.7200E-03	185.6
653.023	-3.0000E-01	-32.4500	7.7100E-03	177.4
689.302	-3.0000E-01	-31.9500	7.6900E-03	166.5
725.581	-3.0000E-01	-32.4500	7.6700E-03	161.0
761.860	-3.0000E-01	-32.0500	7.6700E-03	158.3
798.139	-3.0000E-01	-32.8000	7.6500E-03	155.6
834.418	-3.0000E-01	-33.4000	7.6400E-03	158.3
870.697	-3.0000E-01	-33.3500	7.6200E-03	155.6
906.976	-3.0000E-01	-35.1500	7.5900E-03	161.0
943.255	-3.0000E-01	-34.8000	7.5700E-03	166.5
979.535	-3.0000E-01	-35.3000	7.5500E-03	166.5
1015.814	-3.0000E-01	-35.8500	7.5400E-03	171.3
1052.093	-3.0000E-01	-35.3000	7.5200E-03	177.4
1088.372	-3.0000E-01	-35.3500	7.5300E-03	166.5
1124.651	-3.0000E-01	-35.8500	7.5400E-03	185.6
1160.930	-3.0000E-01	-35.9500	7.5500E-03	177.4
1197.209	-3.0000E-01	-35.8500	7.5600E-03	185.6
1233.488	-3.0000E-01	-35.3500	7.5400E-03	191.6
1269.767	-3.0000E-01	-35.3500	7.5400E-03	191.0
1306.046	-3.0000E-01	-35.3500	7.5500E-03	196.5
1342.325	-3.0000E-01	-35.1500	7.5600E-03	185.6
1378.604	-3.0000E-01	-35.8500	7.5600E-03	177.4
1414.883	-3.0000E-01	-35.6500	7.5700E-03	168.5
1451.162	-3.0000E-01	-35.0000	7.5700E-03	161.0
1487.441	-3.0000E-01	-35.1500	7.5600E-03	158.6
1523.720	-3.0000E-01	-35.0000	7.4900E-03	155.6
1559.999	-3.0000E-01	-34.9500	7.3900E-03	150.1

TEST # 19

FMAGFLT 10.8 cm²,th 0.5";260.0ppmCu,413.4ppm CN,sat CaO;10.8 ml/min

MIN	A	V	Scm ⁻¹	PPM
36.279	-3.0000E-01	-28.0000	6.6200E-03	202.0
72.558	-3.0000E-01	-28.2500	6.6000E-03	204.6
108.837	-3.0000E-01	-29.1000	6.6200E-03	201.1
145.116	-3.0000E-01	-29.9500	6.6200E-03	199.0
181.395	-3.0000E-01	-30.3500	6.6200E-03	191.0
217.674	-3.0000E-01	-31.7500	6.6400E-03	209.0
253.953	-3.0000E-01	-32.1500	6.6400E-03	209.0
290.233	-3.0000E-01	-32.9500	6.6400E-03	207.0
326.512	-3.0000E-01	-33.3500	6.6500E-03	207.0
362.791	-3.0000E-01	-33.6500	6.6500E-03	199.0
399.070	-3.0000E-01	-33.4500	6.6400E-03	186.0
435.349	-3.0000E-01	-34.1000	6.6400E-03	173.5
471.628	-3.0000E-01	-33.5500	6.6400E-03	188.0
507.907	-3.0000E-01	-33.7500	6.6200E-03	176.0
544.186	-3.0000E-01	-34.4000	6.6100E-03	157.9
580.465	-3.0000E-01	-34.4000	6.5900E-03	176.0
616.744	-3.0000E-01	-34.1000	6.5800E-03	160.0
653.023	-3.0000E-01	-34.8000	6.5600E-03	176.1
689.302	-3.0000E-01	-34.8500	6.5600E-03	160.0
725.581	-3.0000E-01	-34.8500	6.5400E-03	183.0
761.860	-3.0000E-01	-34.3500	6.5200E-03	173.0
798.139	-3.0000E-01	-33.7000	6.5100E-03	173.0
834.418	-3.0000E-01	-34.2500	6.4900E-03	168.0
870.697	-3.0000E-01	-33.7500	6.4900E-03	166.0
906.976	-3.0000E-01	-34.3500	6.4600E-03	137.0
943.255	-3.0000E-01	-34.8500	6.4500E-03	139.0
979.535	-3.0000E-01	-34.2500	6.4200E-03	150.0
1015.814	-3.0000E-01	-33.5000	6.3900E-03	137.0
1052.093	-3.0000E-01	-34.4000	6.3800E-03	139.0
1088.372	-3.0000E-01	-33.4000	6.3700E-03	141.0
1124.651	-3.0000E-01	-33.1500	6.3400E-03	141.0
1160.930	-3.0000E-01	-32.1500	6.3400E-03	139.0
1197.209	-3.0000E-01	-32.2500	6.3200E-03	137.0
1233.488	-3.0000E-01	-32.6500	6.3100E-03	126.0
1269.767	-3.0000E-01	-34.4500	6.2900E-03	137.0
1306.046	-3.0000E-01	-36.2000	6.2600E-03	147.6
1342.325	-3.0000E-01	-37.0000	6.2100E-03	152.0
1378.604	-3.0000E-01	-38.7000	6.1800E-03	160.0
1414.883	-3.0000E-01	-37.9000	6.1700E-03	176.0
1451.162	-3.0000E-01	-38.8500	6.1600E-03	160.0
1487.441	-3.0000E-01	-39.4000	6.1600E-03	194.0
1523.720	-3.0000E-01	-40.1500	6.1500E-03	207.0
1559.999	-3.0000E-01	-40.1000	6.1500E-03	194.0

TEST # 20

ERGRVC 100ppi,10.8cm*2,1"th;1212 ppm Cu,1478 ppm CN,sat CaO;21.6 ml/min;*ad

MIN	A	V	Scm ⁻¹	PPM
18.302	-6.6000E-01	-19.4500	1.0280E-02	1001.0
36.605	-6.6000E-01	-19.9000	1.0310E-02	1131.0
54.907	-6.6000E-01	-20.0500	1.0310E-02	1171.0
73.209	-6.6000E-01	-20.1500	1.0290E-02	1042.0
91.512	-6.6000E-01	-20.3000	1.0290E-02	1050.0
109.814	-6.6000E-01	-20.3500	1.0280E-02	1131.0
128.116	-6.6000E-01	-20.7500	1.0260E-02	945.0
146.419	-6.6000E-01	-20.8500	1.0250E-02	949.0
164.721	-6.6000E-01	-20.7500	1.0240E-02	989.0
183.023	-6.6000E-01	-21.1500	1.0240E-02	949.0
201.326	-6.6000E-01	-22.3500	1.0220E-02	989.0
219.628	-6.6000E-01	-21.1500	1.0200E-02	929.0
237.930	-6.6000E-01	-20.9500	1.0200E-02	925.0
256.233	-6.6000E-01	-21.4500	1.0190E-02	905.0
274.535	-6.6000E-01	-21.1000	1.0180E-02	909.0
292.837	-6.6000E-01	-21.2500	1.0170E-02	977.0
311.140	-6.6000E-01	-21.5500	1.0160E-02	1001.0
329.442	-6.6000E-01	-21.4500	1.0150E-02	1034.0
347.744	-6.6000E-01	-21.4500	1.0170E-02	953.0
366.047	-6.6000E-01	-21.3000	1.0120E-02	989.0
384.349	-6.6000E-01	-21.7000	1.0140E-02	925.0
402.651	-6.6000E-01	-21.8000	1.0120E-02	913.0
420.954	-6.6000E-01	-21.7500	1.0090E-02	965.0
439.256	-6.6000E-01	-22.2500	1.0090E-02	917.0
457.558	-6.6000E-01	-22.4000	1.0060E-02	812.0
475.861	-6.6000E-01	-22.5500	1.0060E-02	921.0
494.163	-6.6000E-01	-23.1000	1.0040E-02	727.0
512.465	-6.6000E-01	-23.8000	1.0040E-02	896.0
530.768	-6.6000E-01	-23.4000	1.0030E-02	953.0
549.070	-6.6000E-01	-23.6500	1.0000E-02	880.0
567.372	-6.6000E-01	-23.8500	1.0010E-02	905.0
585.674	-6.6000E-01	-23.9000	9.9800E-03	941.0
603.977	-6.6000E-01	-23.8500	9.9500E-03	929.0
622.279	-6.6000E-01	-23.9000	9.9400E-03	921.0
640.581	-6.6000E-01	-24.2500	9.9100E-03	880.0
658.884	-6.6000E-01	-24.2500	9.8900E-03	937.0
677.186	-6.6000E-01	-24.2500	9.8300E-03	913.0
695.488	-6.6000E-01	-24.8000	9.7600E-03	929.0
713.791	-6.6000E-01	-24.7500	9.6600E-03	917.0
732.093	-6.6000E-01	-25.1500	9.6100E-03	904.0
750.395	-6.6000E-01	-24.2500	8.5400E-03	896.0
768.698	-6.6000E-01	-23.6000	9.4200E-03	917.0
787.000	-6.6000E-01	-22.9500	9.6700E-03	913.0

TEST # 21

ERGRVC 100ppi 10.8cm².1"th;1196 ppm Cu,1471 ppm CN,sat CaO;21.16ml/min,*ad

MIN	A	V	Scm ⁻¹	PPM
18.279	-6.6000E-01	-29.6000	1.0120E-02	1182.0
36.558	-6.6000E-01	-28.9500	1.0150E-02	1148.0
54.837	-6.6000E-01	-28.7500	1.0160E-02	1058.0
73.116	-6.6000E-01	-28.6000	1.0180E-02	1036.0
91.395	-6.6000E-01	-28.4500	1.0170E-02	1032.0
109.674	-6.6000E-01	-28.4500	1.0190E-02	1021.0
127.953	-6.6000E-01	-28.6000	1.0180E-02	1002.0
146.233	-6.6000E-01	-29.6500	1.0180E-02	1069.0
164.512	-6.6000E-01	-28.6500	1.0200E-02	983.0
182.791	-6.6000E-01	-27.8000	1.0180E-02	1021.0
201.070	-6.6000E-01	-27.9500	1.0190E-02	1028.0
219.349	-6.6000E-01	-27.3500	1.0180E-02	995.0
237.628	-6.6000E-01	-27.6000	1.0200E-02	1002.0
255.907	-6.6000E-01	-27.5500	1.0190E-02	897.0
274.186	-6.6000E-01	-27.4000	1.0180E-02	1013.0
292.465	-6.6000E-01	-27.4000	1.0180E-02	946.0
310.744	-6.6000E-01	-27.4000	1.0170E-02	897.0
329.023	-6.6000E-01	-27.4000	1.0190E-02	1032.0
347.302	-6.6000E-01	-27.3000	1.0190E-02	972.0
365.581	-6.6000E-01	-27.8500	1.0160E-02	931.0
383.861	-6.6000E-01	-27.8500	1.0160E-02	916.0
402.140	-6.6000E-01	-28.3000	1.0150E-02	1021.0
420.419	-6.6000E-01	-27.6500	1.0180E-02	912.0
438.698	-6.6000E-01	-27.9500	1.0140E-02	957.0
456.977	-6.6000E-01	-27.9500	1.0140E-02	1054.0
475.256	-6.6000E-01	-27.9000	1.0130E-02	886.0
493.535	-6.6000E-01	-27.9000	1.0120E-02	1039.0
511.814	-6.6000E-01	-28.1500	1.0140E-02	923.0
530.093	-6.6000E-01	-28.2500	1.0130E-02	923.0
548.372	-6.6000E-01	-28.9500	1.0120E-02	871.0
566.651	-6.6000E-01	-29.7500	1.0110E-02	897.0
584.930	-6.6000E-01	-31.3500	1.0120E-02	923.0
603.209	-6.6000E-01	-32.8000	1.0100E-02	935.0
621.488	-6.6000E-01	-32.3500	1.0080E-02	1032.0
639.768	-6.6000E-01	-31.9500	1.0090E-02	983.0
658.047	-6.6000E-01	-32.2500	1.0070E-02	946.0
676.326	-6.6000E-01	-32.8500	1.0070E-02	1013.0
694.605	-6.6000E-01	-32.7000	1.0040E-02	987.0
712.884	-6.6000E-01	-32.0500	1.0020E-02	987.0
731.163	-6.6000E-01	-32.4000	9.9900E-03	1062.0
749.442	-6.6000E-01	-33.1500	9.8600E-03	935.0
767.721	-6.6000E-01	-33.1000	9.8200E-03	991.0
786.000	-6.6000E-01	-32.9000	8.7400E-03	987.0

TEST # 22

ERGRVC 100ppi, 10⁻²cm⁻², 1"th; 1268.0 ppmCu, 1501 ppmCN, sat CaO; 43.1ml/min, *ad

MIN	A	V	Scm ⁻¹	PPM
8.837	-7.0000E-01	-19.9500	1.0570E-02	1248.0
17.674	-7.0000E-01	-19.9000	1.0570E-02	1195.0
26.512	-7.0000E-01	-19.8500	1.0600E-02	1197.0
35.349	-7.0000E-01	-19.8500	1.0580E-02	1187.0
44.186	-7.0000E-01	-20.1500	1.0580E-02	1119.0
53.023	-7.0000E-01	-20.1500	1.0620E-02	1171.0
61.860	-7.0000E-01	-20.2500	1.0560E-02	1145.0
70.698	-7.0000E-01	-20.0500	1.0600E-02	1175.0
79.535	-7.0000E-01	-20.3000	1.0590E-02	1147.0
88.372	-7.0000E-01	-20.3000	1.0590E-02	1131.0
97.209	-7.0000E-01	-20.3500	1.0570E-02	1098.0
106.047	-7.0000E-01	-20.5500	1.0580E-02	1098.0
114.884	-7.0000E-01	-20.6000	1.0560E-02	1090.0
123.721	-7.0000E-01	-20.3500	1.0540E-02	1147.0
132.558	-7.0000E-01	-20.4500	1.0530E-02	1147.0
141.395	-7.0000E-01	-20.7500	1.0530E-02	1131.0
150.233	-7.0000E-01	-20.8500	1.0530E-02	1090.0
159.070	-7.0000E-01	-21.4000	1.0500E-02	1090.0
167.907	-7.0000E-01	-21.2500	1.0500E-02	1050.0
176.744	-7.0000E-01	-21.1500	1.0530E-02	1050.0
185.581	-7.0000E-01	-21.1000	1.0480E-02	1050.0
194.419	-7.0000E-01	-21.1500	1.0510E-02	1050.0
203.256	-7.0000E-01	-21.2500	1.0470E-02	1050.0
212.093	-7.0000E-01	-21.1500	1.0460E-02	1026.0
220.930	-7.0000E-01	-21.3500	1.0460E-02	1050.0
229.767	-7.0000E-01	-21.4500	1.0470E-02	1090.0
238.605	-7.0000E-01	-21.4500	1.0460E-02	1119.0
247.442	-7.0000E-01	-21.6500	1.0440E-02	1123.0
256.279	-7.0000E-01	-21.6500	1.0450E-02	1066.0
265.116	-7.0000E-01	-21.6500	1.0450E-02	1066.0
273.953	-7.0000E-01	-21.4500	1.0440E-02	1066.0
282.791	-7.0000E-01	-21.4000	1.0410E-02	1066.0
291.628	-7.0000E-01	-21.4500	1.0410E-02	1054.0
300.465	-7.0000E-01	-21.6000	1.0410E-02	1054.0
309.302	-7.0000E-01	-21.5000	1.0420E-02	1054.0
318.140	-7.0000E-01	-21.6000	1.0390E-02	1054.0
326.977	-7.0000E-01	-21.6500	1.0410E-02	1054.0
335.814	-7.0000E-01	-21.8000	1.0360E-02	1054.0
344.651	-7.0000E-01	-21.7500	1.0380E-02	1054.0
353.488	-7.0000E-01	-21.7500	1.0370E-02	1054.0
362.326	-7.0000E-01	-21.7500	1.0330E-02	1070.0
371.163	-7.0000E-01	-21.9000	1.0330E-02	1030.0
380.000	-7.0000E-01	-21.9500	1.0330E-02	1078.0

TEST # 23

FMAGFLT 10.8cm²,0.5"th;1107 ppm Cu,1435.3 ppm CN,sat CaO;21.6 ml/min;*ad

MIN	A	V	Scm ⁻¹	PPM
17.674	-6.0000E-01	-50.6000	1.0040E-02	1048.0
35.349	-6.0000E-01	-51.5000	1.0070E-02	1033.0
53.023	-6.0000E-01	-52.1000	1.0110E-02	1111.0
70.698	-6.0000E-01	-52.0000	1.0100E-02	1072.0
88.372	-6.0000E-01	-52.3000	1.0090E-02	1064.0
106.047	-6.0000E-01	-50.7500	1.0080E-02	1029.0
123.721	-6.0000E-01	-49.9500	1.0070E-02	1006.0
141.395	-6.0000E-01	-48.8000	1.0060E-02	1010.0
159.070	-6.0000E-01	-50.0500	1.0030E-02	971.0
176.744	-6.0000E-01	-49.7000	1.0020E-02	951.0
194.419	-6.0000E-01	-48.9000	1.0020E-02	932.0
212.093	-6.0000E-01	-50.2000	1.0010E-02	893.0
229.767	-6.0000E-01	-49.7000	1.0010E-02	959.0
247.442	-6.0000E-01	-49.9500	1.0000E-02	951.0
265.116	-6.0000E-01	-48.7000	9.9600E-03	951.0
282.791	-6.0000E-01	-49.9500	9.9600E-03	951.0
300.465	-6.0000E-01	-50.8500	9.9400E-03	959.0
318.140	-6.0000E-01	-51.5000	9.9200E-03	959.0
335.814	-6.0000E-01	-49.7000	9.9300E-03	951.0
353.488	-6.0000E-01	-50.2000	9.9100E-03	951.0
371.163	-6.0000E-01	-50.5500	9.8900E-03	959.0
388.837	-6.0000E-01	-49.6500	9.8800E-03	959.0
406.512	-6.0000E-01	-51.2500	9.8900E-03	912.0
424.186	-6.0000E-01	-51.4500	9.8900E-03	874.0
441.860	-6.0000E-01	-52.6500	9.8900E-03	874.0
459.535	-6.0000E-01	-53.1500	9.8500E-03	840.0
477.209	-6.0000E-01	-52.5500	9.8200E-03	874.0
494.884	-6.0000E-01	-51.9500	9.8100E-03	912.0
512.558	-6.0000E-01	-52.7500	9.8100E-03	951.0
530.232	-6.0000E-01	-54.1000	9.7900E-03	957.0
547.907	-6.0000E-01	-54.9500	9.7800E-03	912.0
565.581	-6.0000E-01	-55.3000	9.7600E-03	959.0
583.256	-6.0000E-01	-55.9000	9.7700E-03	893.0
600.930	-6.0000E-01	-55.9000	9.7400E-03	912.0
618.605	-6.0000E-01	-56.1000	9.7300E-03	959.0
636.279	-6.0000E-01	-56.1000	9.7000E-03	932.0
653.954	-6.0000E-01	-57.2500	9.7000E-03	893.0
671.628	-6.0000E-01	-57.1000	9.7000E-03	874.0
689.302	-6.0000E-01	-57.7500	9.6900E-03	874.0
706.977	-6.0000E-01	-59.2000	9.6500E-03	874.0
724.651	-6.0000E-01	-55.9000	9.6400E-03	874.0
742.326	-6.0000E-01	-55.2000	9.6300E-03	874.0
760.000	-6.0000E-01	-55.9500	9.6000E-03	874.0

TEST # 24

FMAGFLT 10.8 cm².5"th;1147.0ppm Cu,1934.0 ppm CN,sat CaO;21.6 ml/min,*ad

MIN	λ	V	Scm^{-1}	PPM
15.200	-6.0000E-01	-38.5500	1.1800E-02	991.0
30.400	-6.0000E-01	-39.8500	1.1790E-02	888.3
45.600	-6.0000E-01	-40.8500	1.1840E-02	894.0
60.800	-6.0000E-01	-41.2500	1.1810E-02	923.0
76.000	-6.0000E-01	-40.9000	1.1780E-02	900.0
91.200	-6.0000E-01	-40.9000	1.1740E-02	901.0
106.400	-6.0000E-01	-41.2000	1.1720E-02	900.0
121.600	-6.0000E-01	-40.8000	1.1730E-02	901.0
136.800	-6.0000E-01	-41.8000	1.1690E-02	905.0
152.000	-6.0000E-01	-41.7000	1.1670E-02	919.0
167.200	-6.0000E-01	-42.4500	1.1640E-02	890.0
182.400	-6.0000E-01	-41.6000	1.1620E-02	916.0
197.600	-6.0000E-01	-41.6000	1.1620E-02	952.0
212.800	-6.0000E-01	-42.0000	1.1650E-02	973.0
228.000	-6.0000E-01	-41.9000	1.1600E-02	991.0
243.200	-6.0000E-01	-41.8000	1.1640E-02	1013.0
258.400	-6.0000E-01	-41.9000	1.1560E-02	1010.0
273.600	-6.0000E-01	-42.3500	1.1560E-02	1013.0
288.800	-6.0000E-01	-42.5000	1.1550E-02	1010.0
304.000	-6.0000E-01	-42.8000	1.1520E-02	1026.0
319.200	-6.0000E-01	-42.4000	1.1510E-02	1026.0
334.400	-6.0000E-01	-43.1500	1.1510E-02	1010.0
349.600	-6.0000E-01	-43.0500	1.1510E-02	1013.0
364.800	-6.0000E-01	-43.6000	1.1480E-02	1016.0
380.000	-6.0000E-01	-44.2500	1.1530E-02	963.0
395.200	-6.0000E-01	-44.8000	1.1470E-02	973.0
410.400	-6.0000E-01	-44.6000	1.1450E-02	999.0
425.600	-6.0000E-01	-44.0500	1.1450E-02	1010.0
440.800	-6.0000E-01	-44.7500	1.1500E-02	1010.0
456.000	-6.0000E-01	-45.0000	1.1440E-02	984.0
471.200	-6.0000E-01	-44.8000	1.1410E-02	991.0
486.400	-6.0000E-01	-45.2500	1.1440E-02	894.0
501.600	-6.0000E-01	-45.4000	1.1430E-02	894.0
516.800	-6.0000E-01	-44.8500	1.1390E-02	963.0
532.000	-6.0000E-01	-44.6000	1.1400E-02	959.0
547.200	-6.0000E-01	-44.8000	1.1380E-02	909.0
562.400	-6.0000E-01	-45.0500	1.1370E-02	937.0
577.600	-6.0000E-01	-44.4500	1.1410E-02	991.0
592.800	-6.0000E-01	-44.2000	1.1340E-02	1013.0
608.000	-6.0000E-01	-43.4000	1.1380E-02	1010.0
623.200	-6.0000E-01	-43.4500	1.1340E-02	1046.0
638.400	-6.0000E-01	-44.0000	1.1350E-02	1013.0
653.600	-6.0000E-01	-43.5000	1.1300E-02	1028.0
668.800	-6.0000E-01	-43.1000	1.1300E-02	973.0
684.000	-6.0000E-01	-42.5500	1.1320E-02	955.0
699.200	-6.0000E-01	-42.4500	1.1270E-02	919.0
714.400	-6.0000E-01	-42.3000	1.1270E-02	894.0
729.600	-6.0000E-01	-42.1500	1.1260E-02	880.0
744.800	-6.0000E-01	-41.8000	1.1250E-02	894.0
760.000	-6.0000E-01	-41.7500	1.1260E-02	973.0

TEST # 28

FMAGFLT 10.8 cm², 0.5"th; 1262 ppm Cu, 1987 ppm CN, sat CaO; 21.6 ml/min *ad

MIN	A	V	Scm ⁻¹	PPM
15.600	-6.0000E-01	-2.5600	1.0580E-02	1246.0
31.200	-6.0000E-01	-24.9000	1.0500E-02	1246.0
46.800	-6.0000E-01	-26.0500	1.0480E-02	1246.0
62.400	-6.0000E-01	-26.7500	1.0410E-02	1296.0
78.000	-6.0000E-01	-27.2500	1.0390E-02	1246.0
93.600	-6.0000E-01	-28.1500	1.0350E-02	1262.0
109.200	-6.0000E-01	-28.0000	1.0340E-02	1279.0
124.800	-6.0000E-01	-28.5000	1.0320E-02	1254.0
140.400	-6.0000E-01	-28.8500	1.0320E-02	1195.0
156.000	-6.0000E-01	-28.9000	1.0290E-02	1245.0
171.600	-6.0000E-01	-29.6500	1.0260E-02	1178.0
187.200	-6.0000E-01	-30.0000	1.0260E-02	1228.0
202.800	-6.0000E-01	-30.0000	1.0240E-02	1161.0
218.400	-6.0000E-01	-30.0000	1.0210E-02	1169.0
234.000	-6.0000E-01	-30.2500	1.0210E-02	1178.0
249.600	-6.0000E-01	-30.4000	1.0180E-02	1178.0
265.200	-6.0000E-01	-30.3500	1.0180E-02	1161.0
280.800	-6.0000E-01	-30.6000	1.0180E-02	1094.0
296.400	-6.0000E-01	-30.5000	1.0160E-02	1111.0
312.000	-6.0000E-01	-30.9000	1.0160E-02	1111.0
327.600	-6.0000E-01	-31.2500	1.0160E-02	1094.0
343.200	-6.0000E-01	-31.6000	1.0140E-02	1094.0
358.800	-6.0000E-01	-31.8500	1.0130E-02	1094.0
374.400	-6.0000E-01	-31.7500	1.0120E-02	1094.0
390.000	-6.0000E-01	-32.5000	1.0090E-02	1094.0
405.600	-6.0000E-01	-32.9500	1.0090E-02	1094.0
421.200	-6.0000E-01	-33.4000	1.0070E-02	1094.0
436.800	-6.0000E-01	-34.1500	1.0070E-02	1111.0
452.400	-6.0000E-01	-34.7000	1.0060E-02	1094.0
468.000	-6.0000E-01	-34.7500	1.0050E-02	1102.0
483.600	-6.0000E-01	-35.2500	1.0050E-02	1094.0
499.200	-6.0000E-01	-35.4500	1.0050E-02	1111.0
514.800	-6.0000E-01	-35.1000	1.0020E-02	1094.0
530.400	-6.0000E-01	-36.2000	1.0020E-02	1094.0
546.000	-6.0000E-01	-36.6000	1.0010E-02	1077.0
561.600	-6.0000E-01	-36.8500	1.0030E-02	1085.0
577.200	-6.0000E-01	-37.8000	1.0000E-02	1085.0
592.800	-6.0000E-01	-37.4500	1.0020E-02	1085.0
608.400	-6.0000E-01	-36.9500	1.0010E-02	1094.0
624.000	-6.0000E-01	-37.1000	9.9900E-03	1094.0
639.600	-6.0000E-01	-37.8500	9.9700E-03	1094.0
655.200	-6.0000E-01	-38.4000	9.9500E-03	1102.0
670.800	-6.0000E-01	-38.2000	9.9600E-03	1094.0
686.400	-6.0000E-01	-38.9500	9.9600E-03	1094.0
702.000	-6.0000E-01	-39.0000	9.9200E-03	1094.0
717.600	-6.0000E-01	-38.4500	9.9500E-03	1085.0
733.200	-6.0000E-01	-39.1500	9.9400E-03	1077.0
748.800	-6.0000E-01	-39.7500	9.9100E-03	1077.0
764.400	-6.0000E-01	-40.4500	9.9000E-03	1102.0
780.000	-6.0000E-01	-40.4000	9.9300E-03	1119.0

TEST # 27

FMAGFLT 10.8cm²..5"th;1250ppm Cu,1979 ppm CN.satCaO:21.6ml/min *ad

MIN	A	V	Scm ⁻¹	PPM
15.600	-6.0000E-01	-34.1000	1.1720E-02	1138.0
31.200	-6.0000E-01	-34.7000	1.1670E-02	1100.0
46.800	-6.0000E-01	-34.8000	1.1600E-02	1095.0
62.400	-6.0000E-01	-35.0500	1.1560E-02	1077.0
78.000	-6.0000E-01	-35.6000	1.1560E-02	1006.0
93.600	-6.0000E-01	-35.5500	1.1510E-02	1077.0
109.200	-6.0000E-01	-35.9000	1.1490E-02	1077.0
124.800	-6.0000E-01	-35.9500	1.1500E-02	1077.0
140.400	-6.0000E-01	-36.1000	1.1480E-02	1094.0
156.000	-6.0000E-01	-36.1000	1.1420E-02	1094.0
171.600	-6.0000E-01	-36.3000	1.1390E-02	1094.0
187.200	-6.0000E-01	-36.5000	1.1350E-02	1085.0
202.800	-6.0000E-01	-36.9000	1.1330E-02	1086.0
218.400	-6.0000E-01	-36.6500	1.1320E-02	1085.0
234.000	-6.0000E-01	-36.7000	1.1310E-02	1094.0
249.600	-6.0000E-01	-37.0000	1.1270E-02	1094.0
265.200	-6.0000E-01	-36.8500	1.1250E-02	1119.0
280.800	-6.0000E-01	-37.2000	1.1250E-02	1085.0
296.400	-6.0000E-01	-37.4500	1.1200E-02	1077.0
312.000	-6.0000E-01	-37.2500	1.1200E-02	1077.0
327.600	-6.0000E-01	-37.4500	1.1180E-02	1019.0
343.200	-6.0000E-01	-37.7500	1.1170E-02	1111.0
358.800	-6.0000E-01	-38.0000	1.1180E-02	1094.0
374.400	-6.0000E-01	-38.0500	1.1170E-02	1085.0
390.000	-6.0000E-01	-38.0500	1.1130E-02	1085.0
405.600	-6.0000E-01	-38.4000	1.1120E-02	1085.0
421.200	-6.0000E-01	-38.8000	1.1110E-02	1085.0
436.800	-6.0000E-01	-38.7000	1.1090E-02	1094.0
452.400	-6.0000E-01	-39.2500	1.1100E-02	1094.0
468.000	-6.0000E-01	-39.1500	1.1070E-02	1085.0
483.600	-6.0000E-01	-39.0500	1.1070E-02	1094.0
499.200	-6.0000E-01	-38.8500	1.1040E-02	1085.0
514.800	-6.0000E-01	-39.4500	1.1040E-02	1085.0
530.400	-6.0000E-01	-39.4500	1.1050E-02	1054.0
546.000	-6.0000E-01	-39.8000	1.1010E-02	1085.0
561.600	-6.0000E-01	-39.9500	1.0990E-02	1094.0
577.200	-6.0000E-01	-39.8500	1.1000E-02	1094.0
592.800	-6.0000E-01	-40.0500	1.0960E-02	1094.0
608.400	-6.0000E-01	-40.3000	1.0950E-02	1085.0
624.000	-6.0000E-01	-39.7500	1.0940E-02	1085.0
639.600	-6.0000E-01	-40.3000	1.0940E-02	1095.0
655.200	-6.0000E-01	-39.7500	1.0900E-02	1007.0
670.800	-6.0000E-01	-40.0000	1.0890E-02	1032.0
686.400	-6.0000E-01	-40.3500	1.0880E-02	1085.0
702.000	-6.0000E-01	-40.4000	1.0860E-02	1096.0
717.600	-6.0000E-01	-40.3000	1.0840E-02	1085.0
733.200	-6.0000E-01	-40.3000	1.0840E-02	1062.0
748.800	-6.0000E-01	-40.3000	1.0810E-02	1062.0
764.400	-6.0000E-01	-40.5000	1.0800E-02	1062.0
780.000	-6.0000E-01	-40.5000	1.0760E-02	1095.0

TEST # 4

FMAGFLT 10.8cm², 0.5"th; 213.22ppm Cu, 240.74ppm CN, sat CaO; 10 ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-34.5500	142.1
72.558	-3.0000E-01	-34.2500	134.7
108.837	-3.0000E-01	-34.1000	108.5
145.116	-3.0000E-01	-33.8500	104.7
181.395	-3.0000E-01	-34.1500	97.8
217.674	-3.0000E-01	-33.5500	97.3
253.953	-3.0000E-01	-33.8500	97.3
290.233	-3.0000E-01	-33.1500	95.5
326.512	-3.0000E-01	-33.5000	95.5
362.791	-3.0000E-01	-33.6500	86.0
399.070	-3.0000E-01	-33.8000	71.0
435.349	-3.0000E-01	-33.1500	82.3
471.628	-3.0000E-01	-33.5000	82.3
507.907	-3.0000E-01	-33.9500	71.0
544.186	-3.0000E-01	-33.8000	71.0
580.465	-3.0000E-01	-32.7500	63.6
616.744	-3.0000E-01	-33.4500	63.6
653.023	-3.0000E-01	-34.3500	71.0
689.302	-3.0000E-01	-33.4500	71.0
725.581	-3.0000E-01	-44.4500	71.0
761.860	-3.0000E-01	-30.2500	82.0
798.139	-3.0000E-01	-31.1000	82.0
834.418	-3.0000E-01	-31.6500	67.3
870.697	-3.0000E-01	-31.5000	71.0
906.976	-3.0000E-01	-32.4000	74.8
943.255	-3.0000E-01	-32.4500	89.8
979.535	-3.0000E-01	-30.4500	82.3
1015.814	-3.0000E-01	-31.8500	86.0
1052.093	-3.0000E-01	-33.0500	86.0
1088.372	-3.0000E-01	-33.5500	95.0
1124.651	-3.0000E-01	-33.4500	95.0
1160.930	-3.0000E-01	-33.8500	95.0
1197.209	-3.0000E-01	-33.8000	86.0
1233.488	-3.0000E-01	-33.6500	86.0
1269.767	-3.0000E-01	-34.1500	95.0
1306.046	-3.0000E-01	-34.2000	91.3
1342.325	-3.0000E-01	-34.1500	86.0
1378.604	-3.0000E-01	-33.9500	89.8
1414.883	-3.0000E-01	-33.5500	81.3
1451.162	-3.0000E-01	-34.3000	86.0
1487.441	-3.0000E-01	-34.4500	78.6
1523.720	-3.0000E-01	-33.9500	71.1
1559.999	-3.0000E-01	-34.0000	71.1

TEST # 6

FMAGFLT 10.8cm² 2.0.5"th;236.7ppm Cu,275ppm CN,sat CaO;10.8 ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-35.8500	121.0
72.558	-3.0000E-01	-36.9500	101.0
108.837	-3.0000E-01	-37.1500	89.3
145.116	-3.0000E-01	-37.5500	84.0
181.395	-3.0000E-01	-38.3000	80.8
217.674	-3.0000E-01	-38.4000	77.4
253.953	-3.0000E-01	-38.3500	80.8
290.233	-3.0000E-01	-38.0500	89.8
326.512	-3.0000E-01	-37.8000	101.0
362.791	-3.0000E-01	-37.4500	77.4
399.070	-3.0000E-01	-37.2000	80.8
435.349	-3.0000E-01	-37.2500	89.3
471.628	-3.0000E-01	-36.7500	84.0
507.907	-3.0000E-01	-37.4500	80.8
544.186	-3.0000E-01	-37.6500	77.4
580.465	-3.0000E-01	-37.9500	60.6
616.744	-3.0000E-01	-38.0000	64.0
653.023	-3.0000E-01	-38.1500	70.7
689.302	-3.0000E-01	-38.1000	60.6
725.581	-3.0000E-01	-37.7500	64.0
761.860	-3.0000E-01	-37.2500	60.6
798.139	-3.0000E-01	-37.4500	87.2
834.418	-3.0000E-01	-38.2000	60.6
870.697	-3.0000E-01	-39.4500	64.0
906.976	-3.0000E-01	-38.9500	67.3
943.255	-3.0000E-01	-39.8000	70.7
979.535	-3.0000E-01	-39.6500	70.7
1015.814	-3.0000E-01	-40.6000	70.7
1052.093	-3.0000E-01	-39.5500	70.7
1088.372	-3.0000E-01	-40.0500	67.3
1124.651	-3.0000E-01	-39.4500	67.3
1160.930	-3.0000E-01	-39.4000	70.7
1197.209	-3.0000E-01	-39.9000	67.3
1233.488	-3.0000E-01	-40.2500	74.0
1269.767	-3.0000E-01	-40.2000	74.0
1306.046	-3.0000E-01	-40.9500	80.8
1342.325	-3.0000E-01	-40.4500	74.0
1378.604	-3.0000E-01	-41.1500	80.8
1414.883	-3.0000E-01	-41.3500	74.0
1451.162	-3.0000E-01	-40.5500	64.0
1487.441	-3.0000E-01	-40.4000	67.3
1523.720	-3.0000E-01	-41.6000	63.4
1559.999	-3.0000E-01	-41.5500	67.3

TEST # 5

FMAGFLT 10.8cm²,0.5"th;252.5ppm Cu,256.8ppm CN,sat CaO;10.8 ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-34.0500	92.0
72.558	-3.0000E-01	-35.1500	95.0
108.837	-3.0000E-01	-35.4000	86.0
145.116	-3.0000E-01	-37.4500	77.2
181.395	-3.0000E-01	-37.0500	77.2
217.674	-3.0000E-01	-37.5500	77.2
253.953	-3.0000E-01	-38.0500	77.2
290.233	-3.0000E-01	-38.0000	92.0
326.512	-3.0000E-01	-38.3500	106.9
362.791	-3.0000E-01	-37.4500	109.9
399.070	-3.0000E-01	-37.8500	112.9
435.349	-3.0000E-01	-37.1500	101.0
471.628	-3.0000E-01	-37.7000	98.0
507.907	-3.0000E-01	-37.1500	98.0
544.186	-3.0000E-01	-36.9500	106.9
580.465	-3.0000E-01	-37.6000	101.0
616.744	-3.0000E-01	-37.2000	98.0
653.023	-3.0000E-01	-37.1500	95.0
689.302	-3.0000E-01	-37.1500	98.0
725.581	-3.0000E-01	-38.2500	98.0
761.860	-3.0000E-01	-37.8500	101.0
798.139	-3.0000E-01	-38.3000	112.9
834.418	-3.0000E-01	-39.6500	118.8
870.697	-3.0000E-01	-39.6500	112.9
906.976	-3.0000E-01	-40.3500	115.8
943.255	-3.0000E-01	-40.1500	115.8
979.535	-3.0000E-01	-41.1500	118.8
1015.814	-3.0000E-01	-41.1000	118.8
1052.093	-3.0000E-01	-41.4500	118.8
1088.372	-3.0000E-01	-41.6000	112.9
1124.651	-3.0000E-01	-41.5500	106.9
1160.930	-3.0000E-01	-41.7500	118.8
1197.209	-3.0000E-01	-41.9500	124.8
1233.488	-3.0000E-01	-41.6500	118.8
1269.767	-3.0000E-01	-42.1500	118.8
1306.046	-3.0000E-01	-42.0500	118.8
1342.325	-3.0000E-01	-41.9000	115.8
1378.604	-3.0000E-01	-41.9500	118.8
1414.883	-3.0000E-01	-41.3500	112.9
1451.162	-3.0000E-01	-42.0500	104.0
1487.441	-3.0000E-01	-41.9500	109.9
1523.720	-3.0000E-01	-41.9000	112.9
1559.999	-3.0000E-01	-42.9500	101.0

TEST # 4

FMAGFLT 10.8cm², 0.5"th; 213.22ppm Cu, 240.74ppm CN, sat CaO; 10 ml/min

MIN	A	V	PPM
36.279	-3.0000E-01	-34.5500	142.1
72.558	-3.0000E-01	-34.2500	134.7
108.837	-3.0000E-01	-34.1000	108.5
145.116	-3.0000E-01	-33.8500	104.7
181.395	-3.0000E-01	-34.1500	97.8
217.674	-3.0000E-01	-33.5500	97.3
253.953	-3.0000E-01	-33.8500	97.3
290.233	-3.0000E-01	-33.1500	95.5
326.512	-3.0000E-01	-33.5000	95.5
362.791	-3.0000E-01	-33.6500	86.0
399.070	-3.0000E-01	-33.8000	71.0
435.349	-3.0000E-01	-33.1500	82.3
471.628	-3.0000E-01	-33.5000	82.3
507.907	-3.0000E-01	-33.9500	71.0
544.186	-3.0000E-01	-33.8000	71.0
580.465	-3.0000E-01	-32.7500	63.6
616.744	-3.0000E-01	-33.4500	63.6
653.023	-3.0000E-01	-34.3500	71.0
689.302	-3.0000E-01	-33.4500	71.0
725.581	-3.0000E-01	-44.4500	71.0
761.860	-3.0000E-01	-30.2500	82.0
798.139	-3.0000E-01	-31.1000	82.0
834.418	-3.0000E-01	-31.6500	67.3
870.697	-3.0000E-01	-31.5000	71.0
906.976	-3.0000E-01	-32.4000	74.8
943.255	-3.0000E-01	-32.4500	89.8
979.535	-3.0000E-01	-30.4500	82.3
1015.814	-3.0000E-01	-31.8500	86.0
1052.093	-3.0000E-01	-33.0500	86.0
1088.372	-3.0000E-01	-33.5500	95.0
1124.651	-3.0000E-01	-33.4500	95.0
1160.930	-3.0000E-01	-33.8500	95.0
1197.209	-3.0000E-01	-33.8000	86.0
1233.488	-3.0000E-01	-33.6500	86.0
1269.767	-3.0000E-01	-34.1500	95.0
1306.046	-3.0000E-01	-34.2000	91.3
1342.325	-3.0000E-01	-34.1500	86.0
1378.604	-3.0000E-01	-33.9500	89.8
1414.883	-3.0000E-01	-33.5500	81.3
1451.162	-3.0000E-01	-34.3000	86.0
1487.441	-3.0000E-01	-34.4500	78.6
1523.720	-3.0000E-01	-33.9500	71.1
1559.999	-3.0000E-01	-34.0000	71.1

TEST # 25

FMAGFLT 10.8cm² 2.0.5"th; 1191.0ppm Cu, 1927.9 ppm CN, sat CaO; 10.8 ml/min

MIN	A	V	Scm ⁻¹	PPM
31.200	-3.0000E-01	-19.3500	1.1550E-02	1131.0
62.400	-3.0000E-01	-19.5500	1.1490E-02	1268.0
93.600	-3.0000E-01	-19.6500	1.1410E-02	1212.0
124.800	-3.0000E-01	-19.9000	1.1350E-02	1191.0
156.000	-3.0000E-01	-20.1000	1.1290E-02	1195.0
187.200	-3.0000E-01	-20.4500	1.1260E-02	1212.0
218.400	-3.0000E-01	-20.4500	1.1220E-02	1151.0
249.600	-3.0000E-01	-20.6500	1.1170E-02	1094.0
280.800	-3.0000E-01	-20.8500	1.1160E-02	1187.0
312.000	-3.0000E-01	-21.0000	1.1110E-02	1090.0
343.200	-3.0000E-01	-21.2500	1.1080E-02	1046.0
374.400	-3.0000E-01	-21.3500	1.1080E-02	1001.0
405.600	-3.0000E-01	-21.4000	1.1040E-02	937.0
436.800	-3.0000E-01	-21.4000	1.1020E-02	1212.0
468.000	-3.0000E-01	-21.5000	1.1000E-02	1131.0
499.200	-3.0000E-01	-21.4500	1.1000E-02	1034.0
530.400	-3.0000E-01	-21.3500	1.1000E-02	1127.0
561.600	-3.0000E-01	-21.7500	1.0970E-02	1131.0
592.800	-3.0000E-01	-21.8500	1.0980E-02	1151.0
624.000	-3.0000E-01	-22.1500	1.0940E-02	1131.0
655.200	-3.0000E-01	-22.4500	1.0940E-02	1127.0
686.400	-3.0000E-01	-22.4500	1.0900E-02	1167.0
717.600	-3.0000E-01	-22.4500	1.0910E-02	1284.0
748.800	-3.0000E-01	-22.4000	1.0910E-02	1284.0
780.000	-3.0000E-01	-22.3500	1.0910E-02	1127.0
811.200	-3.0000E-01	-22.5500	1.0940E-02	1212.0
842.400	-3.0000E-01	-22.5500	1.0950E-02	1127.0
873.600	-3.0000E-01	-22.2500	1.0960E-02	1151.0
904.800	-3.0000E-01	-22.5000	1.0980E-02	1131.0
936.000	-3.0000E-01	-22.4500	1.1000E-02	1131.0
967.200	-3.0000E-01	-22.6500	1.1020E-02	1167.0
998.400	-3.0000E-01	-22.6000	1.0990E-02	1212.0
1029.600	-3.0000E-01	-22.8000	1.1010E-02	1171.0
1060.800	-3.0000E-01	-22.9000	1.0980E-02	1163.0
1092.000	-3.0000E-01	-22.7500	1.1000E-02	1163.0
1123.200	-3.0000E-01	-22.7500	1.1000E-02	1212.0
1154.400	-3.0000E-01	-22.9500	1.1010E-02	1058.0
1185.600	-3.0000E-01	-22.9500	1.0990E-02	1119.0
1216.800	-3.0000E-01	-23.1500	1.0960E-02	1115.0
1248.000	-3.0000E-01	-23.2500	1.0950E-02	1127.0
1279.200	-3.0000E-01	-23.4500	1.0900E-02	1171.0
1310.400	-3.0000E-01	-23.4000	1.0830E-02	1216.0
1341.600	-3.0000E-01	-23.6500	1.0740E-02	1171.0
1372.800	-3.0000E-01	-23.7500	1.0700E-02	1191.0
1404.000	-3.0000E-01	-23.6000	1.0690E-02	1131.0
1435.200	-3.0000E-01	-23.6000	1.0660E-02	1131.0
1466.400	-3.0000E-01	-23.9000	1.0630E-02	1147.0
1497.599	-3.0000E-01	-24.0500	1.0640E-02	1131.0
1528.799	-3.0000E-01	-23.9500	1.0630E-02	1131.0
1559.999	-3.0000E-01	-24.1500	1.0600E-02	1050.0

TEST # 26

FMAGFLT 10.8 cm², 0.5"th; 1304.0 ppm Cu, 1511.9 ppm CN, sat CaO; 10.8 ml/min, *ad

MIN	A	V	Scm ⁻¹	PPM
31.200	-3.0000E-01	-21.1000	1.0020E-02	1148.0
62.400	-3.0000E-01	-21.9500	1.0020E-02	1161.0
93.600	-3.0000E-01	-21.7000	9.9700E-03	1157.0
124.800	-3.0000E-01	-22.4500	9.9700E-03	1136.0
156.000	-3.0000E-01	-22.5500	9.9300E-03	1132.0
187.200	-3.0000E-01	-22.8000	9.9000E-03	1148.0
218.400	-3.0000E-01	-22.8500	9.8900E-03	1157.0
249.600	-3.0000E-01	-23.0000	9.8500E-03	1165.0
280.800	-3.0000E-01	-23.3500	9.8200E-03	1152.0
312.000	-3.0000E-01	-23.5500	9.8100E-03	1115.0
343.200	-3.0000E-01	-23.2500	9.7900E-03	1052.0
374.400	-3.0000E-01	-23.4000	9.7700E-03	1010.1
405.600	-3.0000E-01	-23.6500	9.7400E-03	967.0
436.800	-3.0000E-01	-23.6500	9.7300E-03	967.0
468.000	-3.0000E-01	-23.5500	9.7200E-03	967.0
499.200	-3.0000E-01	-23.5500	9.7100E-03	967.0
530.400	-3.0000E-01	-23.5500	9.7000E-03	967.0
561.600	-3.0000E-01	-23.3500	9.6700E-03	946.0
592.800	-3.0000E-01	-23.3000	9.6600E-03	925.0
624.000	-3.0000E-01	-23.4000	9.6500E-03	904.0
655.200	-3.0000E-01	-23.5500	9.6400E-03	883.0
686.400	-3.0000E-01	-23.5000	9.6300E-03	883.0
717.600	-3.0000E-01	-23.9500	9.6000E-03	883.0
748.800	-3.0000E-01	-24.2000	9.6200E-03	883.0
780.000	-3.0000E-01	-24.0500	9.5800E-03	883.0
811.200	-3.0000E-01	-24.2500	9.5600E-03	904.0
842.400	-3.0000E-01	-24.7000	9.5800E-03	904.0
873.600	-3.0000E-01	-24.7500	9.5600E-03	925.0
904.800	-3.0000E-01	-24.6000	9.5200E-03	946.0
936.000	-3.0000E-01	-25.1000	9.5300E-03	946.0
967.200	-3.0000E-01	-25.0000	9.5300E-03	959.0
998.400	-3.0000E-01	-25.2500	9.4900E-03	967.0
1029.600	-3.0000E-01	-25.3000	9.4800E-03	967.0
1060.800	-3.0000E-01	-25.0500	9.4800E-03	967.0
1092.000	-3.0000E-01	-25.0500	9.4500E-03	967.0
1123.200	-3.0000E-01	-25.2000	9.4600E-03	925.0
1154.400	-3.0000E-01	-24.9500	9.4400E-03	904.0
1185.600	-3.0000E-01	-25.3500	9.4300E-03	883.0
1216.800	-3.0000E-01	-24.7500	9.4100E-03	883.0
1248.000	-3.0000E-01	-24.8500	9.4300E-03	883.0
1279.200	-3.0000E-01	-25.0500	9.4100E-03	883.0
1310.400	-3.0000E-01	-25.0000	9.4300E-03	883.0
1341.600	-3.0000E-01	-25.1000	9.4200E-03	883.0
1372.800	-3.0000E-01	-25.1500	9.4100E-03	883.0
1404.000	-3.0000E-01	-25.1500	9.4100E-03	883.0
1435.200	-3.0000E-01	-25.2500	9.4000E-03	883.0
1466.400	-3.0000E-01	-25.2500	9.4000E-03	883.0
1497.599	-3.0000E-01	-25.5000	9.4000E-03	925.0
1528.799	-3.0000E-01	-25.6500	9.3800E-03	909.0
1559.999	-3.0000E-01	-25.8500	9.3600E-03	883.0

TEST # 27

FMAGFLT 10.8cm²,.5"th;1250ppm Cu,1979 ppm CN,satCaO;21.6ml/min *ad

MIN	A	V	Scm ⁻¹	PPM
15.600	-6.0000E-01	-34.1000	1.1720E-02	1138.0
31.200	-6.0000E-01	-34.7000	1.1670E-02	1100.0
46.800	-6.0000E-01	-34.8000	1.1600E-02	1095.0
62.400	-6.0000E-01	-35.0500	1.1560E-02	1077.0
78.000	-6.0000E-01	-35.6000	1.1560E-02	1006.0
93.600	-6.0000E-01	-35.5500	1.1510E-02	1077.0
109.200	-6.0000E-01	-35.9000	1.1490E-02	1077.0
124.800	-6.0000E-01	-35.9500	1.1500E-02	1077.0
140.400	-6.0000E-01	-36.1000	1.1480E-02	1094.0
156.000	-6.0000E-01	-36.1000	1.1420E-02	1094.0
171.600	-6.0000E-01	-36.3000	1.1390E-02	1094.0
187.200	-6.0000E-01	-36.5000	1.1350E-02	1085.0
202.800	-6.0000E-01	-36.9000	1.1330E-02	1086.0
218.400	-6.0000E-01	-36.6500	1.1320E-02	1085.0
234.000	-6.0000E-01	-36.7000	1.1310E-02	1094.0
249.600	-6.0000E-01	-37.0000	1.1270E-02	1094.0
265.200	-6.0000E-01	-36.8500	1.1250E-02	1119.0
280.800	-6.0000E-01	-37.2000	1.1250E-02	1085.0
296.400	-6.0000E-01	-37.4500	1.1200E-02	1077.0
312.000	-6.0000E-01	-37.2500	1.1200E-02	1077.0
327.600	-6.0000E-01	-37.4500	1.1180E-02	1019.0
343.200	-6.0000E-01	-37.7500	1.1170E-02	1111.0
358.800	-6.0000E-01	-38.0000	1.1180E-02	1094.0
374.400	-6.0000E-01	-38.0500	1.1170E-02	1085.0
390.000	-6.0000E-01	-38.0500	1.1130E-02	1085.0
405.600	-6.0000E-01	-38.4000	1.1120E-02	1085.0
421.200	-6.0000E-01	-38.8000	1.1110E-02	1085.0
436.800	-6.0000E-01	-38.7000	1.1090E-02	1094.0
452.400	-6.0000E-01	-39.2500	1.1100E-02	1094.0
468.000	-6.0000E-01	-39.1500	1.1070E-02	1085.0
483.600	-6.0000E-01	-39.0500	1.1070E-02	1094.0
499.200	-6.0000E-01	-38.8500	1.1040E-02	1085.0
514.800	-6.0000E-01	-39.4500	1.1040E-02	1085.0
530.400	-6.0000E-01	-39.4500	1.1050E-02	1054.0
546.000	-6.0000E-01	-39.8000	1.1010E-02	1085.0
561.600	-6.0000E-01	-39.9500	1.0990E-02	1094.0
577.200	-6.0000E-01	-39.8500	1.1000E-02	1094.0
592.800	-6.0000E-01	-40.0500	1.0960E-02	1094.0
608.400	-6.0000E-01	-40.3000	1.0950E-02	1085.0
624.000	-6.0000E-01	-39.7500	1.0940E-02	1085.0
639.600	-6.0000E-01	-40.3000	1.0940E-02	1095.0
655.200	-6.0000E-01	-39.7500	1.0900E-02	1007.0
670.800	-6.0000E-01	-40.0000	1.0890E-02	1032.0
686.400	-6.0000E-01	-40.3500	1.0880E-02	1085.0
702.000	-6.0000E-01	-40.4000	1.0860E-02	1096.0
717.600	-6.0000E-01	-40.3000	1.0840E-02	1085.0
733.200	-6.0000E-01	-40.3000	1.0840E-02	1062.0
748.800	-6.0000E-01	-40.3000	1.0810E-02	1062.0
764.400	-6.0000E-01	-40.5000	1.0800E-02	1062.0
780.000	-6.0000E-01	-40.5000	1.0760E-02	1095.0

TEST # 29

FMAGFLT 10.8cm² 2.0.5"th;1100.0 ppm Cu,1432ppm CN,sat CaO;21.6ml/min

MIN	A	V	Scm ⁻¹	PPM
15.600	-6.0000E-01	-48.9500	1.0490E-02	939.0
31.200	-6.0000E-01	-48.0500	1.0530E-02	843.0
46.800	-6.0000E-01	-46.1500	1.0560E-02	858.0
62.400	-6.0000E-01	-45.3000	1.0550E-02	883.0
78.000	-6.0000E-01	-45.1000	1.0540E-02	909.0
93.600	-6.0000E-01	-45.1500	1.0550E-02	934.0
109.200	-6.0000E-01	-45.0500	1.0540E-02	929.0
124.800	-6.0000E-01	-45.3000	1.0520E-02	929.0
140.400	-6.0000E-01	-45.3000	1.0530E-02	929.0
156.000	-6.0000E-01	-45.4500	1.0540E-02	929.0
171.600	-6.0000E-01	-45.7500	1.0520E-02	929.0
187.200	-6.0000E-01	-46.3500	1.0510E-02	954.0
202.800	-6.0000E-01	-46.0000	1.0510E-02	929.0
218.400	-6.0000E-01	-46.7500	1.0490E-02	873.7
234.000	-6.0000E-01	-46.7000	1.0530E-02	883.0
249.600	-6.0000E-01	-46.8000	1.0490E-02	903.0
265.200	-6.0000E-01	-48.0000	1.0490E-02	909.0
280.800	-6.0000E-01	-47.4500	1.0530E-02	919.0
296.400	-6.0000E-01	-47.5500	1.0500E-02	924.0
312.000	-6.0000E-01	-48.1000	1.0530E-02	919.0
327.600	-6.0000E-01	-47.7000	1.0470E-02	919.0
343.200	-6.0000E-01	-48.5500	1.0510E-02	919.0
358.800	-6.0000E-01	-47.8500	1.0480E-02	909.0
374.400	-6.0000E-01	-48.4000	1.0490E-02	924.0
390.000	-6.0000E-01	-49.1500	1.0480E-02	843.0
405.600	-6.0000E-01	-49.0500	1.0460E-02	944.0
421.200	-6.0000E-01	-49.1000	1.0480E-02	929.0
436.800	-6.0000E-01	-49.4000	1.0470E-02	909.0
452.400	-6.0000E-01	-47.7000	1.0470E-02	909.0
468.000	-6.0000E-01	-46.5000	1.0460E-02	909.0
483.600	-6.0000E-01	-46.4000	1.0470E-02	909.0
499.200	-6.0000E-01	-47.5000	1.0450E-02	909.0
514.800	-6.0000E-01	-47.6000	1.0480E-02	909.0
530.400	-6.0000E-01	-47.7000	1.0440E-02	909.0
546.000	-6.0000E-01	-48.6000	1.0470E-02	919.0
561.600	-6.0000E-01	-48.6000	1.0440E-02	919.0
577.200	-6.0000E-01	-45.8500	1.0440E-02	919.0
592.800	-6.0000E-01	-50.1500	1.0420E-02	919.0
608.400	-6.0000E-01	-49.6500	1.0430E-02	919.0
624.000	-6.0000E-01	-50.3500	1.0430E-02	919.0
639.600	-6.0000E-01	-49.4500	1.0420E-02	919.0
655.200	-6.0000E-01	-48.7000	1.0380E-02	919.0
670.800	-6.0000E-01	-48.7000	1.0370E-02	919.0
686.400	-6.0000E-01	-49.7500	1.0360E-02	919.0
702.000	-6.0000E-01	-50.0000	1.0380E-02	919.0
717.600	-6.0000E-01	-50.0000	1.0360E-02	919.0
733.200	-6.0000E-01	-49.0500	1.0340E-02	919.0
748.800	-6.0000E-01	-49.0500	1.0330E-02	919.0
764.400	-6.0000E-01	-49.5000	1.0320E-02	909.0
780.000	-6.0000E-01	-49.8500	1.0290E-02	909.0

TEST # 30

FMAGFLT 10.8cm*2.0.5"th;1313ppm Cu,1595 ppm CN,sat CaO,21.6ml/min *ad

MIN	A	V	Scm ⁻¹	PPM
15.600	-6.0000E-01	-32.9000	1.0340E-02	986.0
31.200	-6.0000E-01	-34.9000	1.0380E-02	991.0
46.800	-6.0000E-01	-36.1000	1.0370E-02	954.0
62.400	-6.0000E-01	-36.6000	1.0370E-02	934.0
78.000	-6.0000E-01	-37.5500	1.0370E-02	929.0
93.600	-6.0000E-01	-37.1500	1.0360E-02	934.0
109.200	-6.0000E-01	-36.9500	1.0380E-02	954.0
124.800	-6.0000E-01	-37.6000	1.0350E-02	954.0
140.400	-6.0000E-01	-37.4500	1.0350E-02	954.0
156.000	-6.0000E-01	-37.3500	1.0360E-02	954.0
171.600	-6.0000E-01	-37.4500	1.0370E-02	954.0
187.200	-6.0000E-01	-37.8500	1.0320E-02	929.0
202.800	-6.0000E-01	-37.3500	1.0330E-02	954.0
218.400	-6.0000E-01	-37.6500	1.0370E-02	929.0
234.000	-6.0000E-01	-37.1000	1.0320E-02	954.0
249.600	-6.0000E-01	-37.5000	1.0340E-02	954.0
265.200	-6.0000E-01	-37.6000	1.0320E-02	954.0
280.800	-6.0000E-01	-37.6500	1.0360E-02	974.0
296.400	-6.0000E-01	-37.5500	1.0350E-02	974.0
312.000	-6.0000E-01	-37.8500	1.0300E-02	954.0
327.600	-6.0000E-01	-38.4000	1.0300E-02	954.0
343.200	-6.0000E-01	-39.0500	1.0320E-02	954.0
358.800	-6.0000E-01	-38.7000	1.0290E-02	954.0
374.400	-6.0000E-01	-38.6500	1.0280E-02	954.0
390.000	-6.0000E-01	-38.9000	1.0290E-02	954.0
405.600	-6.0000E-01	-38.4000	1.0260E-02	954.0
421.200	-6.0000E-01	-37.4500	1.0250E-02	954.0
436.800	-6.0000E-01	-37.5500	1.0240E-02	954.0
452.400	-6.0000E-01	-37.4000	1.0240E-02	954.0
468.000	-6.0000E-01	-37.5000	1.0220E-02	954.0
483.600	-6.0000E-01	-37.7000	1.0240E-02	929.0
499.200	-6.0000E-01	-37.1000	1.0220E-02	917.0
514.800	-6.0000E-01	-37.5500	1.0220E-02	954.0
530.400	-6.0000E-01	-37.7000	1.0190E-02	974.0
546.000	-6.0000E-01	-37.8500	1.0200E-02	980.0
561.600	-6.0000E-01	-37.3000	1.0170E-02	954.0
577.200	-6.0000E-01	-38.2500	1.0160E-02	924.0
592.800	-6.0000E-01	-38.7000	1.0150E-02	954.0
608.400	-6.0000E-01	-39.7500	1.0160E-02	954.0
624.000	-6.0000E-01	-40.0500	1.0130E-02	954.0
639.600	-6.0000E-01	-39.8500	1.0100E-02	912.0
655.200	-6.0000E-01	-39.9500	1.0100E-02	973.0
670.800	-6.0000E-01	-39.5000	1.0080E-02	973.0
686.400	-6.0000E-01	-40.2500	1.0110E-02	954.0
702.000	-6.0000E-01	-40.1500	1.0050E-02	954.0
717.600	-6.0000E-01	-39.9500	1.0040E-02	954.0
733.200	-6.0000E-01	-39.7500	1.0020E-02	954.0
748.800	-6.0000E-01	-39.6500	1.0030E-02	954.0
764.400	-6.0000E-01	-39.6500	9.9900E-03	954.0
780.000	-6.0000E-01	-39.7500	9.9700E-03	979.0

TEST # 31

FMAGFLT 10.8cm², 0.5"th; 1233.0ppm Cu, 1486.8 ppm CN, sat CaO; 21.6 ml/min *ad

MIN	A	V	Scm ⁻¹	PPM
15.600	-6.0000E-01	-102.3500	1.0770E-02	1010.0
31.200	-6.0000E-01	-102.3500	1.0780E-02	1031.0
46.800	-6.0000E-01	-102.3500	1.0810E-02	1010.0
62.400	-6.0000E-01	-102.3500	1.0850E-02	988.0
78.000	-6.0000E-01	-102.3500	1.0830E-02	997.0
93.600	-6.0000E-01	-102.3500	1.0840E-02	963.0
109.200	-6.0000E-01	-102.3500	1.0840E-02	984.0
124.800	-6.0000E-01	-102.3500	1.0840E-02	988.0
140.400	-6.0000E-01	-102.3500	1.0850E-02	963.0
156.000	-6.0000E-01	-102.3500	1.0830E-02	963.0
171.600	-6.0000E-01	-102.3500	1.0830E-02	967.0
187.200	-6.0000E-01	-102.3500	1.0830E-02	951.0
202.800	-6.0000E-01	-102.3500	1.0850E-02	951.0
218.400	-6.0000E-01	-102.3500	1.0830E-02	951.0
234.000	-6.0000E-01	-102.3500	1.0820E-02	951.0
249.600	-6.0000E-01	-102.3500	1.0820E-02	951.0
265.200	-6.0000E-01	-102.3500	1.0850E-02	951.0
280.800	-6.0000E-01	-102.3500	1.0820E-02	951.0
296.400	-6.0000E-01	-102.3500	1.0820E-02	951.0
312.000	-6.0000E-01	-102.3500	1.0820E-02	951.0
327.600	-6.0000E-01	-102.3500	1.0800E-02	951.0
343.200	-6.0000E-01	-102.3500	1.0810E-02	951.0
358.800	-6.0000E-01	-102.3500	1.0850E-02	951.0
374.400	-6.0000E-01	-102.3500	1.0810E-02	951.0
390.000	-6.0000E-01	-102.3500	1.0810E-02	925.0
405.600	-6.0000E-01	-102.3500	1.0850E-02	883.0
421.200	-6.0000E-01	-102.3500	1.0810E-02	883.0
436.800	-6.0000E-01	-102.3500	1.0810E-02	841.0
452.400	-6.0000E-01	-102.3500	1.0800E-02	799.0
468.000	-6.0000E-01	-102.3500	1.0790E-02	757.0
483.600	-6.0000E-01	-102.3500	1.0810E-02	820.0
499.200	-6.0000E-01	-102.3500	1.0800E-02	824.0
514.800	-6.0000E-01	-102.3500	1.0810E-02	824.0
530.400	-6.0000E-01	-102.3500	1.0800E-02	786.0
546.000	-6.0000E-01	-102.3500	1.0790E-02	786.0
561.600	-6.0000E-01	-102.3500	1.0830E-02	786.0
577.200	-6.0000E-01	-102.3500	1.0790E-02	786.0
592.800	-6.0000E-01	-102.3500	1.0820E-02	799.0
608.400	-6.0000E-01	-102.3500	1.0780E-02	820.0
624.000	-6.0000E-01	-102.3500	1.0790E-02	837.0
639.600	-6.0000E-01	-102.3500	1.0800E-02	883.0
655.200	-6.0000E-01	-102.3500	1.0800E-02	904.0
670.800	-6.0000E-01	-102.3500	1.0780E-02	908.0
686.400	-6.0000E-01	-102.3500	1.0800E-02	890.0
702.000	-6.0000E-01	-102.3500	1.0810E-02	883.0
717.600	-6.0000E-01	-102.3500	1.0770E-02	883.0
733.200	-6.0000E-01	-102.3500	1.0760E-02	890.0
748.800	-6.0000E-01	-102.3500	1.0780E-02	862.0
764.400	-6.0000E-01	-102.3500	1.0750E-02	883.0
780.000	-6.0000E-01	-102.3500	1.0750E-02	883.0

TEST # 32

FMAGFLT 0.5"TH, 10.8 cm²; 1141 ppm Cu, 1449 ppm CN, sat CaO; 21.6 ml/min

MIN	A	V	Scm ⁻¹	PPM
15.600	-6.0000E-01	-3.4500	8.3800E-03	841.0
31.200	-6.0000E-01	-3.5000	8.4100E-03	883.0
46.800	-6.0000E-01	-36.2500	8.3900E-03	856.0
62.400	-6.0000E-01	-36.3500	8.3800E-03	900.0
78.000	-6.0000E-01	-36.9000	8.3900E-03	918.0
93.600	-6.0000E-01	-36.5000	8.3700E-03	900.0
109.200	-6.0000E-01	-36.8500	8.3600E-03	918.0
124.800	-6.0000E-01	-37.6500	8.3700E-03	903.0
140.400	-6.0000E-01	-37.1000	8.3500E-03	856.0
156.000	-6.0000E-01	-37.3000	8.3400E-03	900.0
171.600	-6.0000E-01	-37.1500	8.3100E-03	983.0
187.200	-6.0000E-01	-36.5500	8.3100E-03	856.0
202.800	-6.0000E-01	-37.1000	8.3000E-03	850.0
218.400	-6.0000E-01	-37.2500	8.2900E-03	846.0
234.000	-6.0000E-01	-36.8000	8.2800E-03	825.0
249.600	-6.0000E-01	-36.9500	8.2600E-03	836.0
265.200	-6.0000E-01	-36.9500	8.2600E-03	820.0
280.800	-6.0000E-01	-37.1000	8.2700E-03	816.0
296.400	-6.0000E-01	-36.8500	8.2400E-03	800.0
312.000	-6.0000E-01	-36.9000	8.2300E-03	810.0
327.600	-6.0000E-01	-37.1000	8.2300E-03	800.0
343.200	-6.0000E-01	-37.2500	8.2200E-03	805.0
358.800	-6.0000E-01	-37.6000	8.2200E-03	795.0
374.400	-6.0000E-01	-37.3500	8.2300E-03	781.0
390.000	-6.0000E-01	-37.5000	8.2100E-03	800.0
405.600	-6.0000E-01	-37.8500	8.2300E-03	781.0
421.200	-6.0000E-01	-38.0000	8.2000E-03	765.0
436.800	-6.0000E-01	-38.7000	8.2000E-03	740.0
452.400	-6.0000E-01	-38.2500	8.2000E-03	728.0
468.000	-6.0000E-01	-37.8500	8.2000E-03	740.0
483.600	-6.0000E-01	-38.1000	8.1700E-03	766.0
499.200	-6.0000E-01	-38.1500	8.1700E-03	770.0
514.800	-6.0000E-01	-38.1500	8.1500E-03	781.0
530.400	-6.0000E-01	-37.7500	8.1500E-03	740.0
546.000	-6.0000E-01	-37.7500	8.1500E-03	790.0
561.600	-6.0000E-01	-38.2000	8.1300E-03	800.0
577.200	-6.0000E-01	-38.5500	8.1200E-03	883.0
592.800	-6.0000E-01	-38.3000	8.1100E-03	856.0
608.400	-6.0000E-01	-38.7000	8.1000E-03	860.0
624.000	-6.0000E-01	-39.1000	8.0900E-03	860.0
639.600	-6.0000E-01	-39.6500	8.1000E-03	860.0
655.200	-6.0000E-01	-39.6000	8.0800E-03	860.0
670.800	-6.0000E-01	-39.9500	8.0900E-03	856.0
686.400	-6.0000E-01	-40.3000	8.0700E-03	831.0
702.000	-6.0000E-01	-40.5000	8.0400E-03	800.0
717.600	-6.0000E-01	-40.8000	8.0400E-03	816.0
733.200	-6.0000E-01	-41.1000	8.0300E-03	800.0
748.800	-6.0000E-01	-41.0500	8.0100E-03	816.0
764.400	-6.0000E-01	-41.7500	8.0100E-03	800.0
780.000	-6.0000E-01	-41.9500	7.9900E-03	816.0

TEST # 33

FMAGFLT 10.8cm², 0.5cm th; 1236 ppm Cu, 1488 ppm CN, SAT CaO; 21.6ml/min

MIN	A	V	Scm ⁻¹	PPM
15.600	-6.0000E-01	-42.7500	8.8600E-03	970.0
31.200	-6.0000E-01	-43.0500	8.8600E-03	904.0
46.800	-6.0000E-01	-43.2500	8.8700E-03	886.0
62.400	-6.0000E-01	-43.5000	8.8700E-03	896.0
78.000	-6.0000E-01	-43.2000	8.8600E-03	870.0
93.600	-6.0000E-01	-43.6500	8.8800E-03	910.0
109.200	-6.0000E-01	-43.4500	8.8500E-03	904.0
124.800	-6.0000E-01	-43.8000	8.8700E-03	891.0
140.400	-6.0000E-01	-43.7500	8.8500E-03	900.0
156.000	-6.0000E-01	-43.4000	8.8500E-03	891.0
171.600	-6.0000E-01	-43.5500	8.8300E-03	904.0
187.200	-6.0000E-01	-43.9000	8.8300E-03	891.0
202.800	-6.0000E-01	-43.7500	8.8200E-03	856.0
218.400	-6.0000E-01	-43.2500	8.8100E-03	856.0
234.000	-6.0000E-01	-42.6500	8.8000E-03	856.0
249.600	-6.0000E-01	-42.0500	8.7900E-03	856.0
265.200	-6.0000E-01	-41.6500	8.8000E-03	856.0
280.800	-6.0000E-01	-41.6500	8.7800E-03	856.0
296.400	-6.0000E-01	-41.9000	8.7700E-03	878.0
312.000	-6.0000E-01	-41.9000	8.7700E-03	856.0
327.600	-6.0000E-01	-42.1500	8.7600E-03	812.0
343.200	-6.0000E-01	-42.4500	8.7400E-03	856.0
358.800	-6.0000E-01	-43.4500	8.7300E-03	878.0
374.400	-6.0000E-01	-44.1000	8.7200E-03	878.0
390.000	-6.0000E-01	-44.9000	8.7200E-03	878.0
405.600	-6.0000E-01	-45.5000	8.7000E-03	878.0
421.200	-6.0000E-01	-46.2500	8.7200E-03	878.0
436.800	-6.0000E-01	-47.0500	8.6900E-03	878.0
452.400	-6.0000E-01	-46.3000	8.6800E-03	878.0
468.000	-6.0000E-01	-46.5500	8.6900E-03	878.0
483.600	-6.0000E-01	-46.6500	8.6800E-03	878.0
499.200	-6.0000E-01	-46.7500	8.6600E-03	878.0
514.800	-6.0000E-01	-46.1000	8.6500E-03	878.0
530.400	-6.0000E-01	-45.9000	8.6600E-03	878.0
546.000	-6.0000E-01	-45.6000	8.6400E-03	878.0
561.600	-6.0000E-01	-46.1500	8.6300E-03	895.0
577.200	-6.0000E-01	-46.6000	8.6100E-03	878.0
592.800	-6.0000E-01	-45.8000	8.6000E-03	860.0
608.400	-6.0000E-01	-45.8000	8.6000E-03	856.0
624.000	-6.0000E-01	-45.6000	8.6100E-03	840.0
639.600	-6.0000E-01	-45.9000	8.5900E-03	856.0
655.200	-6.0000E-01	-45.2000	8.5800E-03	812.0
670.800	-6.0000E-01	-45.6000	8.5800E-03	856.0
686.400	-6.0000E-01	-45.6500	8.5600E-03	795.0
702.000	-6.0000E-01	-45.6000	8.5600E-03	776.0
717.600	-6.0000E-01	-46.0000	8.5500E-03	816.0
733.200	-6.0000E-01	-45.5500	8.5400E-03	786.0
748.800	-6.0000E-01	-45.8500	8.5400E-03	768.0
764.400	-6.0000E-01	-46.1500	8.5200E-03	768.0
780.000	-6.0000E-01	-46.2000	8.5200E-03	904.0

TEST # 34

FMAGFLT 10.8cm², 0.5"th; 228ppmCu, 306.7ppm CN, 5000 ppm NaCl, SAT CaO; 21.6ml/mi:

MIN	A	V	Scm ⁻¹	PPM
15.600	-3.0000E-01	-14.4900	1.1660E-02	140.0
31.200	-3.0000E-01	-15.9600	1.1770E-02	153.0
46.800	-3.0000E-01	-15.8700	1.1780E-02	144.0
62.400	-3.0000E-01	-15.8100	1.1810E-02	136.0
78.000	-3.0000E-01	-15.8600	1.1820E-02	144.0
93.600	-3.0000E-01	-16.0800	1.1860E-02	136.0
109.200	-3.0000E-01	-16.1400	1.1840E-02	140.0
124.800	-3.0000E-01	-16.2900	1.1880E-02	136.0
140.400	-3.0000E-01	-16.3000	1.1860E-02	140.0
156.000	-3.0000E-01	-16.4500	1.1860E-02	153.0
171.600	-3.0000E-01	-16.3500	1.1890E-02	136.0
187.200	-3.0000E-01	-16.4300	1.1890E-02	153.0
202.800	-3.0000E-01	-16.4000	1.1880E-02	153.0
218.400	-3.0000E-01	-16.3700	1.1880E-02	153.0
234.000	-3.0000E-01	-16.3900	1.1900E-02	153.0
249.600	-3.0000E-01	-16.4500	1.1910E-02	153.0
265.200	-3.0000E-01	-16.4600	1.1900E-02	153.0
280.800	-3.0000E-01	-16.4600	1.1880E-02	153.0
296.400	-3.0000E-01	-16.3900	1.1880E-02	153.0
312.000	-3.0000E-01	-16.4900	1.1880E-02	153.0
327.600	-3.0000E-01	-16.3800	1.1880E-02	153.0
343.200	-3.0000E-01	-16.3900	1.1890E-02	153.0
358.800	-3.0000E-01	-16.4500	1.1880E-02	153.0
374.400	-3.0000E-01	-16.4900	1.1960E-02	140.0
390.000	-3.0000E-01	-16.4300	1.1890E-02	140.0
405.600	-3.0000E-01	-16.4400	1.1910E-02	140.0
421.200	-3.0000E-01	-16.3300	1.1910E-02	140.0
436.800	-3.0000E-01	-16.3200	1.1880E-02	140.0
452.400	-3.0000E-01	-16.3100	1.1890E-02	140.0
468.000	-3.0000E-01	-16.3400	1.1890E-02	140.0
483.600	-3.0000E-01	-16.3800	1.1880E-02	140.0
499.200	-3.0000E-01	-16.4200	1.1890E-02	140.0
514.800	-3.0000E-01	-16.4200	1.1890E-02	140.0
530.400	-3.0000E-01	-16.3800	1.1890E-02	140.0
546.000	-3.0000E-01	-16.3200	1.1860E-02	140.0
561.600	-3.0000E-01	-16.4000	1.1860E-02	140.0
577.200	-3.0000E-01	-16.4800	1.1850E-02	136.0
592.800	-3.0000E-01	-16.4600	1.1870E-02	158.0
608.400	-3.0000E-01	-16.3200	1.1840E-02	140.0
624.000	-3.0000E-01	-16.3700	1.1850E-02	136.0
639.600	-3.0000E-01	-16.4800	1.1850E-02	149.0
655.200	-3.0000E-01	-16.5000	1.1840E-02	158.0
670.800	-3.0000E-01	-16.5000	1.1840E-02	144.0
686.400	-3.0000E-01	-16.4400	1.1820E-02	149.0
702.000	-3.0000E-01	-16.4600	1.1810E-02	140.0
717.600	-3.0000E-01	-16.5200	1.1810E-02	136.0
733.200	-3.0000E-01	-16.4800	1.1820E-02	140.0
748.800	-3.0000E-01	-16.4400	1.1810E-02	244.0
764.400	-3.0000E-01	-16.4200	1.1790E-02	149.0
780.000	-3.0000E-01	-16.5000	1.1780E-02	140.0

TEST # 35

FMAGFLT 10.8cm² 2.0.5"th;232.3ppm Cu,299.6ppm CN,sat CaO;21.6ml/min

MIN	A	V	Scm ⁻¹	PPM
15.600	-3.0000E-01	-25.8500	6.3200E-03	171.0
31.200	-3.0000E-01	-27.7000	5.9500E-03	158.0
46.800	-3.0000E-01	-28.4500	5.8500E-03	151.0
62.400	-3.0000E-01	-29.0000	5.7800E-03	148.0
78.000	-3.0000E-01	-29.4500	5.7400E-03	148.0
93.600	-3.0000E-01	-29.7500	5.7000E-03	148.0
109.200	-3.0000E-01	-30.1000	5.6800E-03	148.0
124.800	-3.0000E-01	-30.2000	5.6700E-03	148.0
140.400	-3.0000E-01	-30.4000	5.6400E-03	148.0
156.000	-3.0000E-01	-30.7000	5.6400E-03	148.0
171.600	-3.0000E-01	-30.9000	5.6400E-03	148.0
187.200	-3.0000E-01	-30.9000	5.6200E-03	148.0
202.800	-3.0000E-01	-30.7500	5.6200E-03	148.0
218.400	-3.0000E-01	-30.9000	5.6200E-03	148.0
234.000	-3.0000E-01	-31.1500	5.6200E-03	148.0
249.600	-3.0000E-01	-31.2500	5.6100E-03	148.0
265.200	-3.0000E-01	-31.4000	5.6100E-03	148.0
280.800	-3.0000E-01	-31.3000	5.6100E-03	148.0
296.400	-3.0000E-01	-31.5000	5.6100E-03	148.0
312.000	-3.0000E-01	-31.6000	5.6000E-03	148.0
327.600	-3.0000E-01	-31.6000	5.6000E-03	148.0
343.200	-3.0000E-01	-31.7000	5.6000E-03	148.0
358.800	-3.0000E-01	-31.8000	5.6200E-03	148.0
374.400	-3.0000E-01	-31.9000	5.6000E-03	148.0
390.000	-3.0000E-01	-31.9000	5.6000E-03	134.0
405.600	-3.0000E-01	-31.7500	5.6000E-03	141.0
421.200	-3.0000E-01	-31.9000	5.6000E-03	138.0
436.800	-3.0000E-01	-31.8500	5.6000E-03	134.0
452.400	-3.0000E-01	-31.9000	5.6000E-03	127.0
468.000	-3.0000E-01	-31.9500	5.5900E-03	131.0
483.600	-3.0000E-01	-32.1500	5.5900E-03	138.0
499.200	-3.0000E-01	-32.1500	5.5900E-03	141.0
514.800	-3.0000E-01	-32.0000	5.5900E-03	134.0
530.400	-3.0000E-01	-32.2000	5.5900E-03	124.0
546.000	-3.0000E-01	-32.1500	5.5800E-03	141.0
561.600	-3.0000E-01	-32.2500	5.5800E-03	144.0
577.200	-3.0000E-01	-32.3000	5.5800E-03	134.0
592.800	-3.0000E-01	-32.4000	5.5800E-03	138.0
608.400	-3.0000E-01	-32.3000	5.5800E-03	124.0
624.000	-3.0000E-01	-32.4500	5.5800E-03	121.0
639.600	-3.0000E-01	-32.4500	5.5800E-03	131.0
655.200	-3.0000E-01	-32.5500	5.5800E-03	117.0
670.800	-3.0000E-01	-32.8500	5.5700E-03	134.0
686.400	-3.0000E-01	-32.6500	5.5800E-03	148.0
702.000	-3.0000E-01	-32.5500	5.5600E-03	148.0
717.600	-3.0000E-01	-32.9000	5.5500E-03	148.0
733.200	-3.0000E-01	-32.6500	5.5400E-03	148.0
748.800	-3.0000E-01	-32.8500	5.5200E-03	127.0
764.400	-3.0000E-01	-32.8000	5.5100E-03	144.0
780.000	-3.0000E-01	-32.8500	5.5200E-03	148.0

TEST # 36

FMAGFLT 10.8 cm² 0.5"th; 241.27 ppmCu; 303.3 ppm CN; sat CaO; 21.6 ml/min

MIN	A	V	Scm ⁻¹	PPM
15.600	-3.0000E-01	-33.2500	5.6800E-03	185.0
31.200	-3.0000E-01	-33.7500	5.7100E-03	168.0
46.800	-3.0000E-01	-33.8000	5.7200E-03	168.0
62.400	-3.0000E-01	-33.8500	5.7300E-03	168.0
78.000	-3.0000E-01	-34.0500	5.7300E-03	168.0
93.600	-3.0000E-01	-34.0000	5.7300E-03	159.0
109.200	-3.0000E-01	-33.9000	5.7400E-03	168.0
124.800	-3.0000E-01	-34.2000	5.7300E-03	168.0
140.400	-3.0000E-01	-33.9000	5.7400E-03	168.0
156.000	-3.0000E-01	-34.2000	5.7500E-03	168.0
171.600	-3.0000E-01	-34.3500	5.7400E-03	168.0
187.200	-3.0000E-01	-34.2000	5.7400E-03	168.0
202.800	-3.0000E-01	-33.9500	5.7400E-03	168.0
218.400	-3.0000E-01	-34.1500	5.7500E-03	168.0
234.000	-3.0000E-01	-34.4000	5.7500E-03	168.0
249.600	-3.0000E-01	-34.4000	5.7500E-03	168.0
265.200	-3.0000E-01	-34.4500	5.7500E-03	168.0
280.800	-3.0000E-01	-34.2500	5.7500E-03	168.0
296.400	-3.0000E-01	-34.5500	5.7500E-03	168.0
312.000	-3.0000E-01	-34.5000	5.7600E-03	168.0
327.600	-3.0000E-01	-34.4000	5.7600E-03	168.0
343.200	-3.0000E-01	-34.5500	5.7600E-03	168.0
358.800	-3.0000E-01	-34.7000	5.7600E-03	168.0
374.400	-3.0000E-01	-34.7500	5.7600E-03	168.0
390.000	-3.0000E-01	-34.7500	5.7600E-03	168.0
405.600	-3.0000E-01	-34.6000	5.7600E-03	168.0
421.200	-3.0000E-01	-35.1500	5.7600E-03	168.0
436.800	-3.0000E-01	-35.0500	5.7600E-03	168.0
452.400	-3.0000E-01	-35.0000	5.7500E-03	168.0
468.000	-3.0000E-01	-35.1500	5.7600E-03	168.0
483.600	-3.0000E-01	-34.9500	5.7600E-03	168.0
499.200	-3.0000E-01	-34.6000	5.7600E-03	168.0
514.800	-3.0000E-01	-34.2500	5.7500E-03	168.0
530.400	-3.0000E-01	-34.5000	5.7600E-03	168.0
546.000	-3.0000E-01	-34.4500	5.7500E-03	168.0
561.600	-3.0000E-01	-34.5000	5.7400E-03	168.0
577.200	-3.0000E-01	-34.5000	5.7400E-03	168.0
592.800	-3.0000E-01	-34.5000	5.7300E-03	168.0
608.400	-3.0000E-01	-34.7500	5.7300E-03	168.0
624.000	-3.0000E-01	-34.9000	5.7200E-03	168.0
639.600	-3.0000E-01	-34.6500	5.7200E-03	168.0
655.200	-3.0000E-01	-34.8500	5.7100E-03	168.0
670.800	-3.0000E-01	-34.8000	5.6900E-03	168.0
686.400	-3.0000E-01	-35.1000	5.6900E-03	168.0
702.000	-3.0000E-01	-35.0000	5.6800E-03	168.0
717.600	-3.0000E-01	-35.3000	5.6600E-03	165.0
733.200	-3.0000E-01	-34.9500	5.6500E-03	159.0
748.800	-3.0000E-01	-35.2500	5.6400E-03	154.0
764.400	-3.0000E-01	-35.5000	5.6300E-03	173.0
780.000	-3.0000E-01	-35.4500	5.6100E-03	162.0

TEST # 37

FMAGFLT 10.8cm², 0.5"th; 235.0ppm Cu, 300.8 ppm CN, sat CaO; 43.2ml/min

MIN	A	V	Scm ⁻¹	PPM
8.000	-3.0000E-01	-35.1000	5.4200E-03	259.0
16.000	-3.0000E-01	-35.5000	5.4200E-03	253.0
24.000	-3.0000E-01	-35.5500	5.4300E-03	242.0
32.000	-3.0000E-01	-35.5500	5.4200E-03	236.0
40.000	-3.0000E-01	-35.5000	5.4300E-03	230.0
48.000	-3.0000E-01	-35.7000	5.4300E-03	236.0
56.000	-3.0000E-01	-35.7500	5.4200E-03	233.0
64.000	-3.0000E-01	-36.5500	5.4200E-03	230.0
72.000	-3.0000E-01	-35.8500	5.4200E-03	236.0
80.000	-3.0000E-01	-35.9500	5.4200E-03	225.0
88.000	-3.0000E-01	-36.0500	5.4200E-03	219.0
96.000	-3.0000E-01	-36.1500	5.4200E-03	216.0
104.000	-3.0000E-01	-36.0000	5.4300E-03	213.0
112.000	-3.0000E-01	-36.2000	5.4300E-03	216.0
120.000	-3.0000E-01	-36.1000	5.4300E-03	210.0
128.000	-3.0000E-01	-36.0500	5.4400E-03	222.0
136.000	-3.0000E-01	-36.3000	5.4400E-03	219.0
144.000	-3.0000E-01	-36.3000	5.4400E-03	216.0
152.000	-3.0000E-01	-36.2500	5.4400E-03	219.0
160.000	-3.0000E-01	-36.2000	5.4500E-03	216.0
168.000	-3.0000E-01	-36.3500	5.4500E-03	210.0
176.000	-3.0000E-01	-36.3000	5.4500E-03	222.0
184.000	-3.0000E-01	-36.9500	5.4600E-03	219.0
192.000	-3.0000E-01	-37.3000	5.4600E-03	216.0
200.000	-3.0000E-01	-36.9500	5.4600E-03	219.0
208.000	-3.0000E-01	-36.3000	5.4600E-03	216.0
216.000	-3.0000E-01	-36.2000	5.4700E-03	219.0
224.000	-3.0000E-01	-36.3500	5.4700E-03	213.0
232.000	-3.0000E-01	-36.4000	5.4700E-03	213.0
240.000	-3.0000E-01	-36.2000	5.4700E-03	213.0
248.000	-3.0000E-01	-36.3500	5.4600E-03	213.0
256.000	-3.0000E-01	-36.4500	5.4700E-03	213.0
264.000	-3.0000E-01	-36.2500	5.4800E-03	213.0
272.000	-3.0000E-01	-36.1500	5.4800E-03	213.0
280.000	-3.0000E-01	-36.9000	5.4800E-03	216.0
288.000	-3.0000E-01	-36.6500	5.4800E-03	216.0
296.000	-3.0000E-01	-37.6000	5.4800E-03	219.0
304.000	-3.0000E-01	-36.3500	5.4800E-03	213.0
312.000	-3.0000E-01	-37.6500	5.4800E-03	225.0
320.000	-3.0000E-01	-36.4000	5.4900E-03	219.0
328.000	-3.0000E-01	-36.7500	5.4800E-03	216.0
336.000	-3.0000E-01	-37.1000	5.4800E-03	219.0
344.000	-3.0000E-01	-36.3500	5.4900E-03	216.0
352.000	-3.0000E-01	-36.5500	5.4800E-03	219.0
360.000	-3.0000E-01	-36.6000	5.4800E-03	216.0
368.000	-3.0000E-01	-37.3000	5.4900E-03	213.0
376.000	-3.0000E-01	-37.4000	5.4800E-03	211.0
384.000	-3.0000E-01	-37.4500	5.4900E-03	201.0
392.000	-3.0000E-01	-37.7500	5.4800E-03	204.0
400.000	-3.0000E-01	-37.6500	5.4700E-03	207.0

TEST # 38

FMAGFLT 10.8cm² 0.5"th;236ppm Cu,301.2 ppm CN,sat CaO;43.2ml/min

MIN	A	V	Scm ⁻¹	PPM
8.000	-3.0000E-01	-34.0500	5.5700E-03	274.0
16.000	-3.0000E-01	-34.7000	5.5900E-03	259.0
24.000	-3.0000E-01	-34.8000	5.5900E-03	262.0
32.000	-3.0000E-01	-34.9000	5.5900E-03	253.0
40.000	-3.0000E-01	-35.2500	5.5900E-03	251.0
48.000	-3.0000E-01	-35.0500	5.5800E-03	253.0
56.000	-3.0000E-01	-35.2500	5.5800E-03	253.0
64.000	-3.0000E-01	-35.1500	5.5800E-03	235.0
72.000	-3.0000E-01	-35.2000	5.5700E-03	248.0
80.000	-3.0000E-01	-35.4500	5.5700E-03	231.0
88.000	-3.0000E-01	-36.4000	5.5800E-03	229.0
96.000	-3.0000E-01	-36.8000	5.5700E-03	265.0
104.000	-3.0000E-01	-36.4000	5.5700E-03	259.0
112.000	-3.0000E-01	-36.5000	5.5700E-03	253.0
120.000	-3.0000E-01	-35.9500	5.5700E-03	242.0
128.000	-3.0000E-01	-35.9500	5.5600E-03	230.0
136.000	-3.0000E-01	-35.7500	5.5600E-03	236.0
144.000	-3.0000E-01	-35.7500	5.5600E-03	230.0
152.000	-3.0000E-01	-35.9500	5.5700E-03	233.0
160.000	-3.0000E-01	-35.9000	5.5600E-03	230.0
168.000	-3.0000E-01	-36.0000	5.5600E-03	227.0
176.000	-3.0000E-01	-35.7000	5.5600E-03	232.0
184.000	-3.0000E-01	-36.0500	5.5600E-03	236.0
192.000	-3.0000E-01	-35.7000	5.5600E-03	227.0
200.000	-3.0000E-01	-36.1000	5.5600E-03	230.0
208.000	-3.0000E-01	-36.2000	5.5600E-03	227.0
216.000	-3.0000E-01	-36.2000	5.5600E-03	224.0
224.000	-3.0000E-01	-36.2000	5.5600E-03	236.0
232.000	-3.0000E-01	-36.2000	5.5700E-03	254.0
240.000	-3.0000E-01	-36.2000	5.5600E-03	227.0
248.000	-3.0000E-01	-36.3000	5.5600E-03	216.0
256.000	-3.0000E-01	-36.3500	5.5600E-03	202.0
264.000	-3.0000E-01	-36.2500	5.5600E-03	205.0
272.000	-3.0000E-01	-36.2500	5.5600E-03	211.0
280.000	-3.0000E-01	-36.4000	5.5600E-03	202.0
288.000	-3.0000E-01	-36.5000	5.5600E-03	211.0
296.000	-3.0000E-01	-36.5000	5.5600E-03	206.0
304.000	-3.0000E-01	-36.7500	5.5500E-03	222.2
312.000	-3.0000E-01	-36.5500	5.5600E-03	230.0
320.000	-3.0000E-01	-37.7000	5.5600E-03	230.0
328.000	-3.0000E-01	-37.6500	5.5500E-03	230.0
336.000	-3.0000E-01	-37.6500	5.5400E-03	230.0
344.000	-3.0000E-01	-37.4500	5.5400E-03	230.0
352.000	-3.0000E-01	-37.0500	5.5400E-03	227.0
360.000	-3.0000E-01	-37.1000	5.5400E-03	224.0
368.000	-3.0000E-01	-37.0500	5.5400E-03	213.0
376.000	-3.0000E-01	-37.0500	5.5300E-03	216.0
384.000	-3.0000E-01	-36.6500	5.5200E-03	216.0
392.000	-3.0000E-01	-37.0000	5.5200E-03	207.0
400.000	-3.0000E-01	-37.2000	5.5200E-03	216.0

TEST # 39

FMAGFLT 10.8cm², 0.5"th; 237.0ppmCu, 403.9ppm CN, sat CaO; 21.6ml/min

MIN	A	V	Scm ⁻¹	PPM
15.600	-3.0000E-01	-28.5500	6.0000E-03	231.0
31.200	-3.0000E-01	-28.8000	6.0100E-03	228.0
46.800	-3.0000E-01	-28.7500	5.9800E-03	231.0
62.400	-3.0000E-01	-29.3000	5.9900E-03	225.0
78.000	-3.0000E-01	-29.3000	5.9800E-03	225.0
93.600	-3.0000E-01	-29.3500	5.9700E-03	218.0
109.200	-3.0000E-01	-29.9000	5.9700E-03	218.0
124.800	-3.0000E-01	-30.2000	5.9600E-03	218.0
140.400	-3.0000E-01	-30.5500	5.9600E-03	218.0
156.000	-3.0000E-01	-30.4500	5.9500E-03	218.0
171.600	-3.0000E-01	-30.6000	5.9400E-03	218.0
187.200	-3.0000E-01	-30.5500	5.9200E-03	218.0
202.800	-3.0000E-01	-30.8000	5.9100E-03	218.0
218.400	-3.0000E-01	-31.0500	5.9100E-03	218.0
234.000	-3.0000E-01	-31.2000	5.9000E-03	218.0
249.600	-3.0000E-01	-31.1000	5.8900E-03	218.0
265.200	-3.0000E-01	-31.3500	5.8800E-03	218.0
280.800	-3.0000E-01	-31.2500	5.8800E-03	218.0
296.400	-3.0000E-01	-31.4000	5.8800E-03	202.0
312.000	-3.0000E-01	-31.2500	5.8800E-03	202.0
327.600	-3.0000E-01	-31.1500	5.8600E-03	211.0
343.200	-3.0000E-01	-31.1000	5.8700E-03	208.0
358.800	-3.0000E-01	-31.1500	5.8600E-03	195.0
374.400	-3.0000E-01	-31.4500	5.8600E-03	193.0
390.000	-3.0000E-01	-31.7000	5.8600E-03	195.0
405.600	-3.0000E-01	-31.7500	5.8500E-03	195.0
421.200	-3.0000E-01	-31.8500	5.8500E-03	195.0
436.800	-3.0000E-01	-31.7500	5.8500E-03	195.0
452.400	-3.0000E-01	-31.9500	5.8400E-03	202.0
468.000	-3.0000E-01	-32.0500	5.8400E-03	205.0
483.600	-3.0000E-01	-32.3000	5.8400E-03	195.0
499.200	-3.0000E-01	-32.2500	5.8300E-03	179.0
514.800	-3.0000E-01	-32.1000	5.8200E-03	185.0
530.400	-3.0000E-01	-32.1500	5.8300E-03	195.0
546.000	-3.0000E-01	-32.0500	5.8200E-03	182.0
561.600	-3.0000E-01	-32.2000	5.8100E-03	175.0
577.200	-3.0000E-01	-32.4000	5.8100E-03	178.0
592.800	-3.0000E-01	-32.3500	5.8000E-03	224.0
608.400	-3.0000E-01	-32.3500	5.8000E-03	202.0
624.000	-3.0000E-01	-32.5500	5.8000E-03	215.0
639.600	-3.0000E-01	-32.4500	5.7800E-03	195.0
655.200	-3.0000E-01	-32.6500	5.7900E-03	211.0
670.800	-3.0000E-01	-32.9000	5.7800E-03	208.0
686.400	-3.0000E-01	-32.9000	5.7600E-03	211.0
702.000	-3.0000E-01	-32.9500	5.7600E-03	208.0
717.600	-3.0000E-01	-32.9500	5.7600E-03	198.0
733.200	-3.0000E-01	-33.0500	5.7500E-03	195.0
748.800	-3.0000E-01	-32.9000	5.7400E-03	202.0
764.400	-3.0000E-01	-33.1500	5.7400E-03	221.0
780.000	-3.0000E-01	-32.9500	5.7300E-03	220.0

TEST # 40

FMAGFLT 10.8cm², 0.5"th; 234.0ppm Cu, 402.7ppm CN, 5000ppm NaCl, sat CaO; 21.6ml/r.

MIN	A	V	Scm ⁻¹	PPM
15.600	-3.0000E-01	-16.4700	1.2220E-02	192.0
31.200	-3.0000E-01	-16.3600	1.2350E-02	195.0
46.800	-3.0000E-01	-16.2200	1.2410E-02	198.0
62.400	-3.0000E-01	-16.1800	1.2410E-02	192.0
78.000	-3.0000E-01	-16.1700	1.2440E-02	195.0
93.600	-3.0000E-01	-16.2100	1.2470E-02	195.0
109.200	-3.0000E-01	-16.2900	1.2490E-02	195.0
124.800	-3.0000E-01	-16.2100	1.2510E-02	195.0
140.400	-3.0000E-01	-16.1500	1.2530E-02	195.0
156.000	-3.0000E-01	-16.0900	1.2540E-02	192.0
171.600	-3.0000E-01	-16.0600	1.2550E-02	188.0
187.200	-3.0000E-01	-15.9800	1.2580E-02	185.0
202.800	-3.0000E-01	-16.0400	1.2590E-02	185.0
218.400	-3.0000E-01	-16.0000	1.2620E-02	188.0
234.000	-3.0000E-01	-16.0500	1.2580E-02	188.0
249.600	-3.0000E-01	-16.0300	1.2620E-02	185.0
265.200	-3.0000E-01	-15.9800	1.2610E-02	192.0
280.800	-3.0000E-01	-15.9900	1.2670E-02	195.0
296.400	-3.0000E-01	-16.0000	1.2600E-02	195.0
312.000	-3.0000E-01	-15.9000	1.2600E-02	195.0
327.600	-3.0000E-01	-16.0300	1.2610E-02	185.0
343.200	-3.0000E-01	-15.9800	1.2610E-02	182.0
358.800	-3.0000E-01	-16.0100	1.2610E-02	182.0
374.400	-3.0000E-01	-15.9000	1.2620E-02	182.0
390.000	-3.0000E-01	-16.0000	1.2610E-02	182.0
405.600	-3.0000E-01	-15.9600	1.2620E-02	182.0
421.200	-3.0000E-01	-15.8800	1.2610E-02	182.0
436.800	-3.0000E-01	-15.9800	1.2610E-02	182.0
452.400	-3.0000E-01	-15.9600	1.2600E-02	179.0
468.000	-3.0000E-01	-15.9100	1.2600E-02	179.0
483.600	-3.0000E-01	-16.0700	1.2640E-02	179.0
499.200	-3.0000E-01	-16.0200	1.2600E-02	182.0
514.800	-3.0000E-01	-16.0200	1.2630E-02	182.0
530.400	-3.0000E-01	-16.0200	1.2590E-02	182.0
546.000	-3.0000E-01	-16.0700	1.2580E-02	182.0
561.600	-3.0000E-01	-16.0300	1.2590E-02	182.0
577.200	-3.0000E-01	-16.1300	1.2540E-02	182.0
592.800	-3.0000E-01	-16.0600	1.2560E-02	179.0
608.400	-3.0000E-01	-16.1200	1.2500E-02	179.0
624.000	-3.0000E-01	-16.2300	1.2510E-02	179.0
639.600	-3.0000E-01	-16.1000	1.2520E-02	179.0
655.200	-3.0000E-01	-16.1700	1.2480E-02	179.0
670.800	-3.0000E-01	-16.1400	1.2500E-02	179.0
686.400	-3.0000E-01	-16.2300	1.2450E-02	179.0
702.000	-3.0000E-01	-16.1500	1.2440E-02	179.0
717.600	-3.0000E-01	-16.1000	1.2440E-02	179.0
733.200	-3.0000E-01	-16.1300	1.2400E-02	179.0
748.800	-3.0000E-01	-16.1300	1.2380E-02	179.0
764.400	-3.0000E-01	-16.1700	1.2370E-02	185.0
780.000	-3.0000E-01	-16.1700	1.2360E-02	169.0

TEST # 41

FMAGFLT 10.8 cm², 0.5"th; 242.4 ppm Cu, 304.6ppm CN, sat CaO; 21.6ml/min

MIN	A	V	PPM
15.600	-6.0000E-01	-44.2500	181.8
31.200	-6.0000E-01	-47.1500	177.7
46.800	-6.0000E-01	-49.9000	161.6
62.400	-6.0000E-01	-50.9000	157.5
78.000	-6.0000E-01	-51.4500	153.5
93.600	-6.0000E-01	-51.0000	153.5
109.200	-6.0000E-01	-51.2000	141.4
124.800	-6.0000E-01	-51.5000	141.4
140.400	-6.0000E-01	-50.8500	141.4
156.000	-6.0000E-01	-51.5500	137.4
171.600	-6.0000E-01	-50.7000	133.3
187.200	-6.0000E-01	-51.1000	133.3
202.800	-6.0000E-01	-51.7000	133.3
218.400	-6.0000E-01	-51.9000	137.4
234.000	-6.0000E-01	-52.1500	133.3
249.600	-6.0000E-01	-51.0000	133.3
265.200	-6.0000E-01	-51.9500	133.3
280.800	-6.0000E-01	-51.9500	141.4
296.400	-6.0000E-01	-50.4500	141.4
312.000	-6.0000E-01	-50.9500	141.4
327.600	-6.0000E-01	-51.7000	141.4
343.200	-6.0000E-01	-50.8500	137.4
358.800	-6.0000E-01	-52.3000	137.4
374.400	-6.0000E-01	-51.2000	133.3
390.000	-6.0000E-01	-51.0000	133.3
405.600	-6.0000E-01	-51.3000	133.3
421.200	-6.0000E-01	-52.4500	129.3
436.800	-6.0000E-01	-51.4000	133.3
452.400	-6.0000E-01	-52.2500	133.3
468.000	-6.0000E-01	-52.4000	133.3
483.600	-6.0000E-01	-52.1000	133.3
499.200	-6.0000E-01	-53.0500	133.3
514.800	-6.0000E-01	-52.0000	133.3
530.400	-6.0000E-01	-52.7500	143.3
546.000	-6.0000E-01	-53.2000	133.3
561.600	-6.0000E-01	-52.5000	133.3
577.200	-6.0000E-01	-51.8500	133.3
592.800	-6.0000E-01	-53.0000	133.3
608.400	-6.0000E-01	-52.9000	133.3
624.000	-6.0000E-01	-53.5500	133.3
639.600	-6.0000E-01	-53.8000	133.3
655.200	-6.0000E-01	-53.9500	133.3
670.800	-6.0000E-01	-53.2000	137.3
686.400	-6.0000E-01	-54.3500	141.4
702.000	-6.0000E-01	-53.7000	141.4
717.600	-6.0000E-01	-54.6000	133.3
733.200	-6.0000E-01	-53.5000	137.4
748.800	-6.0000E-01	-54.3000	129.3
764.400	-6.0000E-01	-54.6500	125.2
780.000	-6.0000E-01	-54.0500	133.3

TEST # 42

FMAGFLT 10.8 cm², 0.5"th; 226 ppm Cu, 300.4ppm CN, SAT CaO; 21.6 ml/min

MIN	A	V	PPM
16.000	-6.0000E-01	-54.7500	137.4
32.000	-6.0000E-01	-55.3000	133.3
48.000	-6.0000E-01	-57.2000	133.3
64.000	-6.0000E-01	-58.1000	133.3
80.000	-6.0000E-01	-59.5500	133.3
96.000	-6.0000E-01	-60.0500	133.3
112.000	-6.0000E-01	-58.6000	129.3
128.000	-6.0000E-01	-58.6000	125.2
144.000	-6.0000E-01	-59.5000	121.2
160.000	-6.0000E-01	-59.9500	121.2
176.000	-6.0000E-01	-59.8500	121.2
192.000	-6.0000E-01	-59.9500	121.2
208.000	-6.0000E-01	-60.2000	121.2
224.000	-6.0000E-01	-60.5000	121.2
240.000	-6.0000E-01	-60.3500	121.2
256.000	-6.0000E-01	-60.1500	121.2
272.000	-6.0000E-01	-59.6500	117.6
288.000	-6.0000E-01	-60.0500	117.6
304.000	-6.0000E-01	-60.7000	117.6
320.000	-6.0000E-01	-60.6500	117.6
336.000	-6.0000E-01	-60.6000	117.6
352.000	-6.0000E-01	-61.6000	117.6
368.000	-6.0000E-01	-62.0000	117.6
384.000	-6.0000E-01	-62.4500	117.6
400.000	-6.0000E-01	-61.9000	113.1
416.000	-6.0000E-01	-62.5500	113.1
432.000	-6.0000E-01	-63.1500	109.1
448.000	-6.0000E-01	-63.7000	117.2
464.000	-6.0000E-01	-63.5500	113.1
480.000	-6.0000E-01	-63.5500	117.2
496.000	-6.0000E-01	-64.6500	109.1
512.000	-6.0000E-01	-64.9500	109.1
528.000	-6.0000E-01	-65.6500	105.0
544.000	-6.0000E-01	-66.7500	101.0
560.000	-6.0000E-01	-66.9500	101.0
576.000	-6.0000E-01	-67.2500	101.0
592.000	-6.0000E-01	-67.7500	101.0
608.000	-6.0000E-01	-68.4500	97.0
624.000	-6.0000E-01	-69.1000	101.0
640.000	-6.0000E-01	-69.5500	105.0
656.000	-6.0000E-01	-67.4000	101.0
672.000	-6.0000E-01	-68.1000	105.0
688.000	-6.0000E-01	-69.2000	101.0
704.000	-6.0000E-01	-70.7000	97.0
720.000	-6.0000E-01	-70.7000	97.0
736.000	-6.0000E-01	-72.4500	101.0
752.000	-6.0000E-01	-75.2500	92.9
768.000	-6.0000E-01	-76.6000	101.0
784.000	-6.0000E-01	-77.7500	101.0
800.000	-6.0000E-01	-79.5000	97.0

TEST # 43

FMAGFLT 10.8 cm², 0.5"th; 226.0ppm Cu, 399.46ppm CN, sat CaO; 21.6 ml/min

MIN	A	V	PPM
16.000	-6.0000E-01	-70.4000	173.7
32.000	-6.0000E-01	-71.9000	173.7
48.000	-6.0000E-01	-73.2500	177.0
64.000	-6.0000E-01	-74.5500	169.0
80.000	-6.0000E-01	-75.4000	161.0
96.000	-6.0000E-01	-76.8500	153.0
112.000	-6.0000E-01	-78.0000	153.0
128.000	-6.0000E-01	-78.4500	153.0
144.000	-6.0000E-01	-79.3000	157.0
160.000	-6.0000E-01	-79.9500	161.0
176.000	-6.0000E-01	-80.5000	153.0
192.000	-6.0000E-01	-81.1500	145.0
208.000	-6.0000E-01	-82.1000	153.0
224.000	-6.0000E-01	-82.5000	149.0
240.000	-6.0000E-01	-83.0500	157.0
256.000	-6.0000E-01	-83.4000	161.0
272.000	-6.0000E-01	-83.7000	161.0
288.000	-6.0000E-01	-84.2000	157.0
304.000	-6.0000E-01	-85.2500	153.0
320.000	-6.0000E-01	-85.6000	153.0
336.000	-6.0000E-01	-86.5000	153.0
352.000	-6.0000E-01	-87.0500	153.0
368.000	-6.0000E-01	-87.5000	153.0
384.000	-6.0000E-01	-87.5500	153.0
400.000	-6.0000E-01	-87.6500	153.0
416.000	-6.0000E-01	-87.8500	153.0
432.000	-6.0000E-01	-89.3000	153.0
448.000	-6.0000E-01	-89.8500	153.0
464.000	-6.0000E-01	-89.9000	153.0
480.000	-6.0000E-01	-90.4500	153.0
496.000	-6.0000E-01	-91.5000	149.0
512.000	-6.0000E-01	-92.0000	153.0
528.000	-6.0000E-01	-94.1500	149.0
544.000	-6.0000E-01	-93.3000	153.0
560.000	-6.0000E-01	-95.3500	153.0
576.000	-6.0000E-01	-95.4500	145.0
592.000	-6.0000E-01	-96.2500	145.0
608.000	-6.0000E-01	-98.1500	145.0
624.000	-6.0000E-01	-99.2000	145.0
640.000	-6.0000E-01	-102.0000	145.0
656.000	-6.0000E-01	-102.3500	145.0
672.000	-6.0000E-01	-102.3500	145.0
688.000	-6.0000E-01	-102.3500	145.0
704.000	-6.0000E-01	-102.3500	145.0
720.000	-6.0000E-01	-102.3500	161.0
736.000	-6.0000E-01	-102.3500	153.0
752.000	-6.0000E-01	-102.3500	161.0
768.000	-6.0000E-01	-102.3500	161.0
784.000	-6.0000E-01	-102.3500	165.0
800.000	-6.0000E-01	-102.3500	165.0

TEST # 44

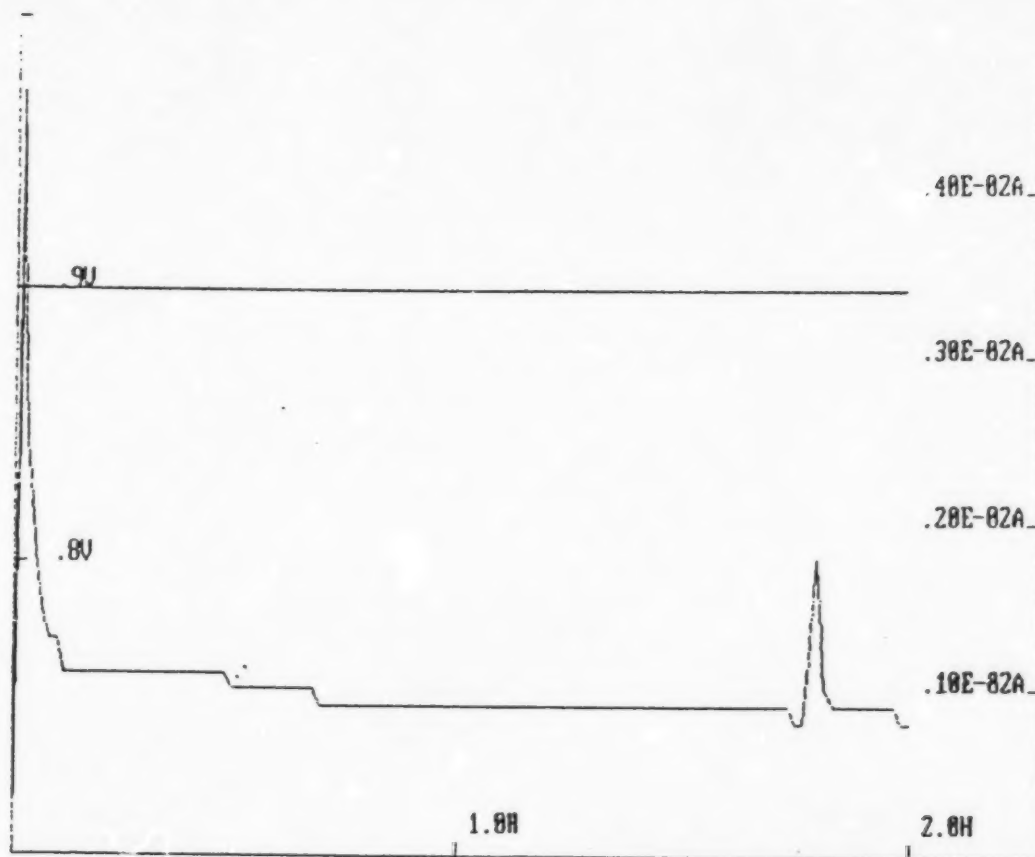


FIG 1
10 cm² of carbon felt anode + copper cathode in strip solution at 0.9V

TEST # 45

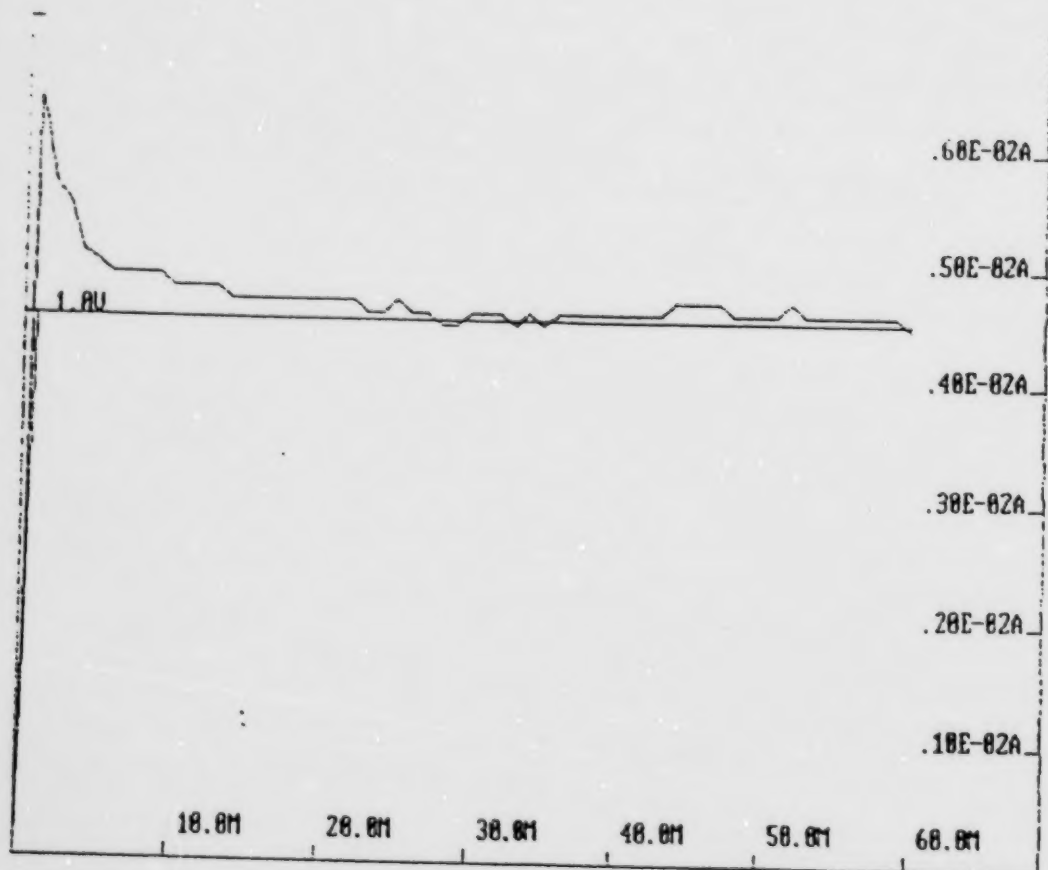


FIG 2
10 cm² of carbon felt anode + copper cathode in strip solution at 1V

TEST # 46

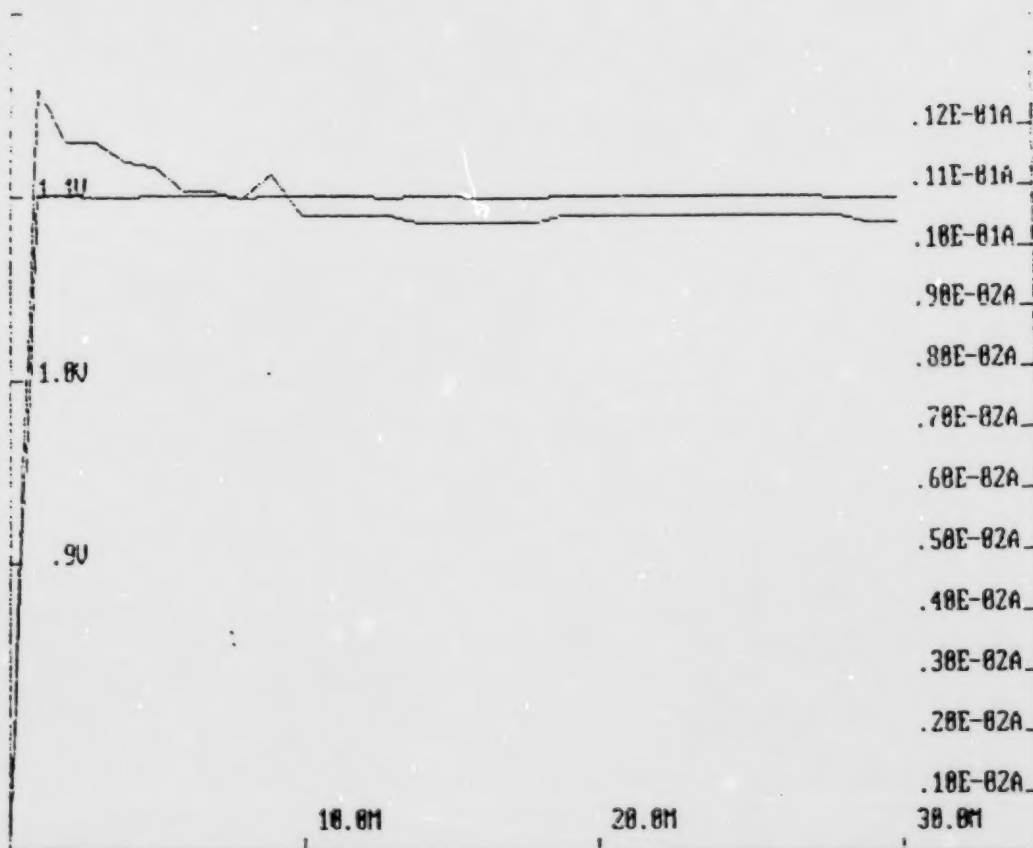


FIG 3
10 cm² of carbon felt anode + copper cathode in strip solution at 1.1 V

TEST # 47

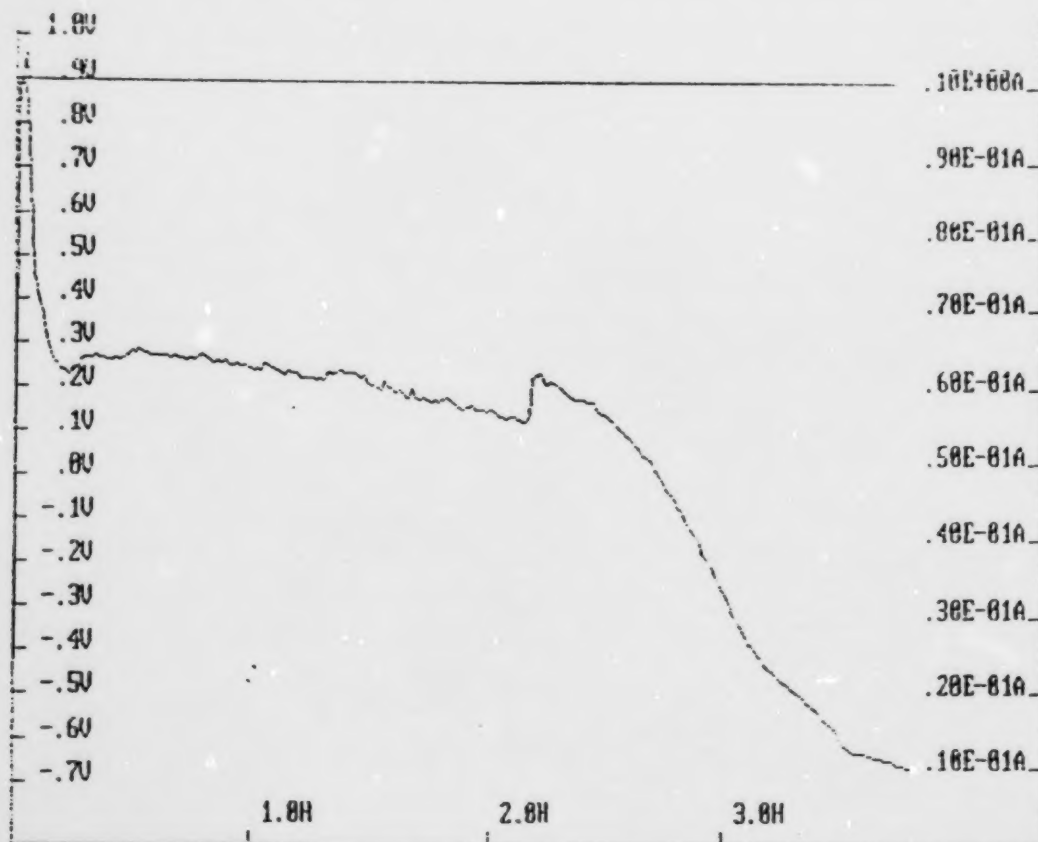


FIG 4

Cu stripping at flow rate 2 cm/min through the fibres and 150 cm/min parallel the starter sheet. Current density ≤ 10 mA/cm, potential ≤ 0.9 V.

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TEST # 48

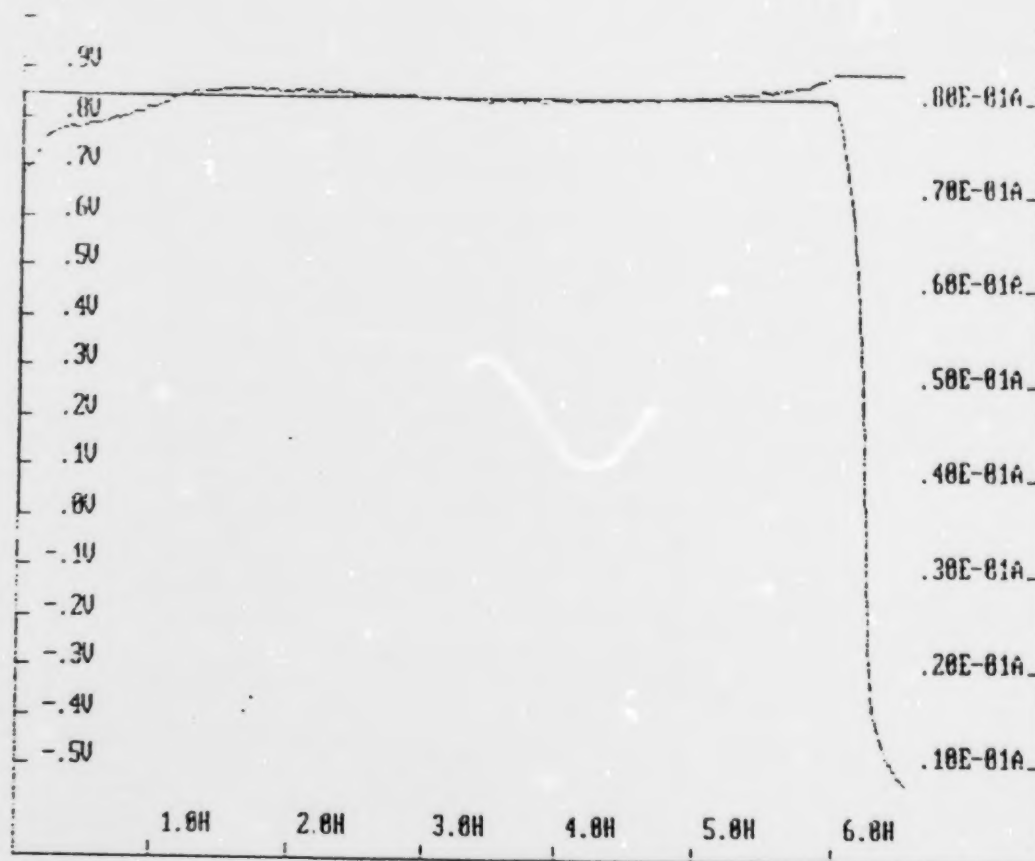


FIG 5
Cu stripping at flow rate 10 cm/min through the fibres and 150 cm/min parallel the starter sheet. Current density ≤ 8 mA/cm², potential ≤ 0.9 V.

TEST # 49

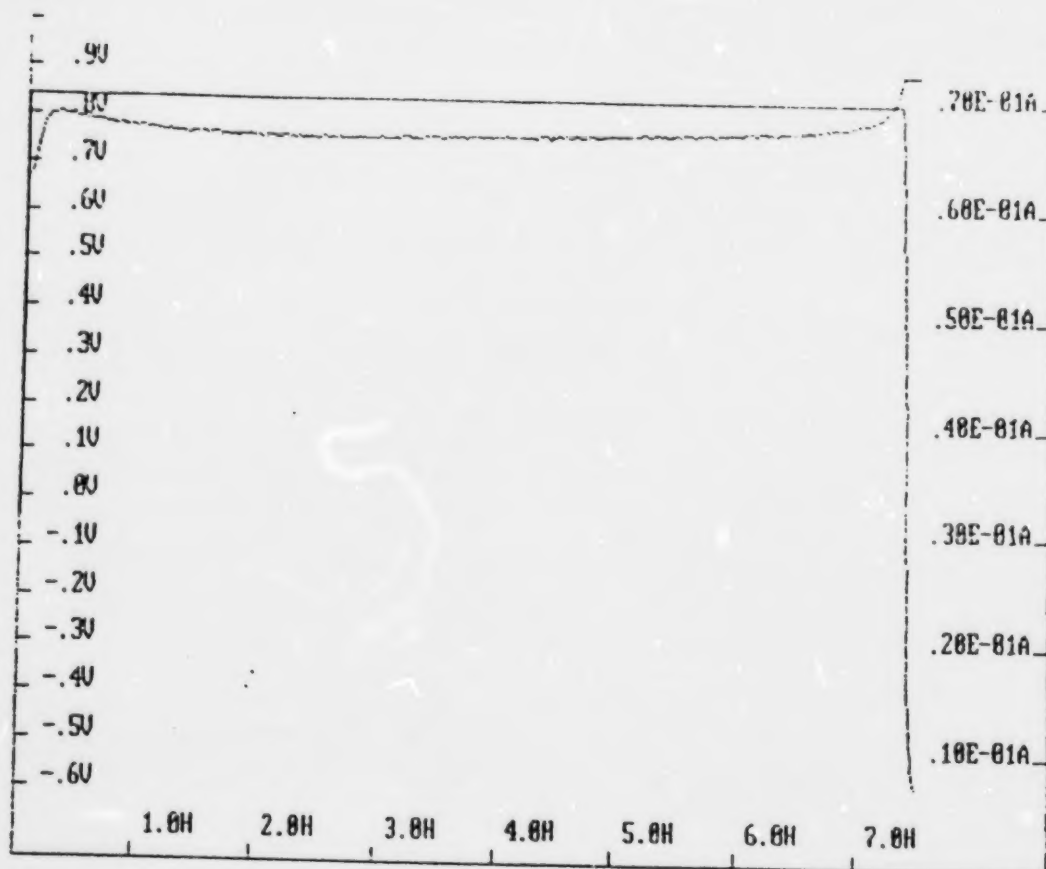


FIG 6
Cu stripping at flow rate 10 cm/min through the fibres and 150 cm/min.
parallel the starter sheet. Current density $\leq 7 \text{ mA/cm}^2$, potential $\leq 0.9 \text{ V}$.

TEST # 50

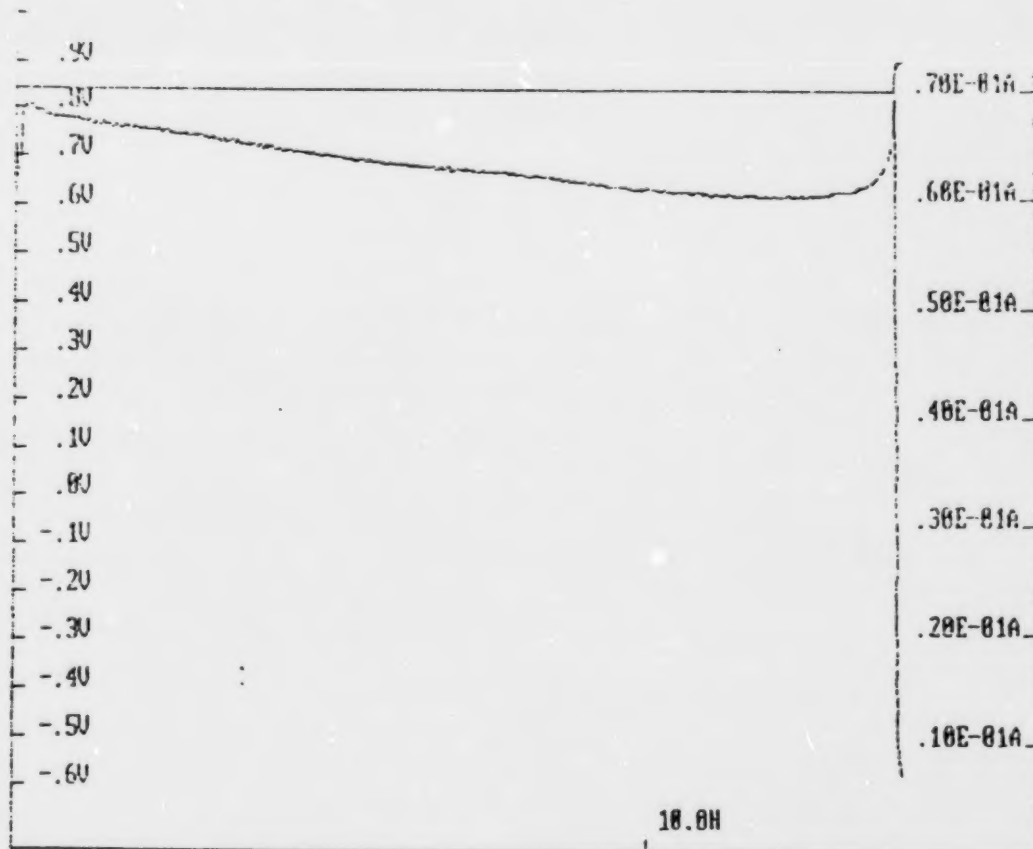
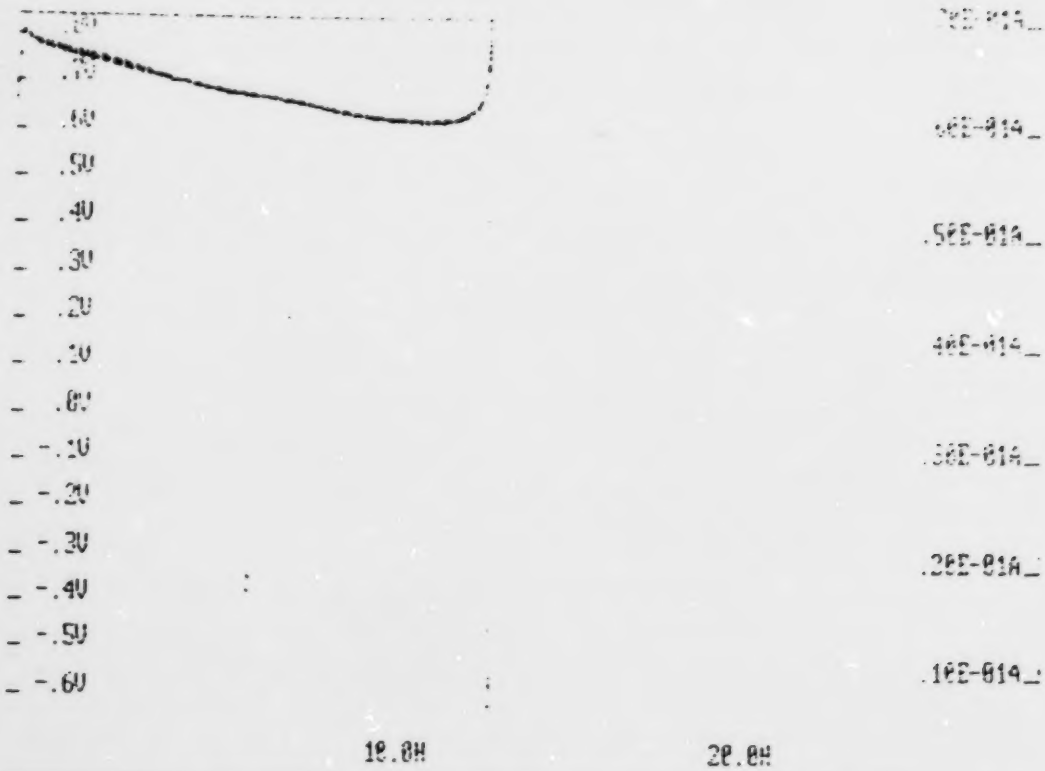


FIG 7

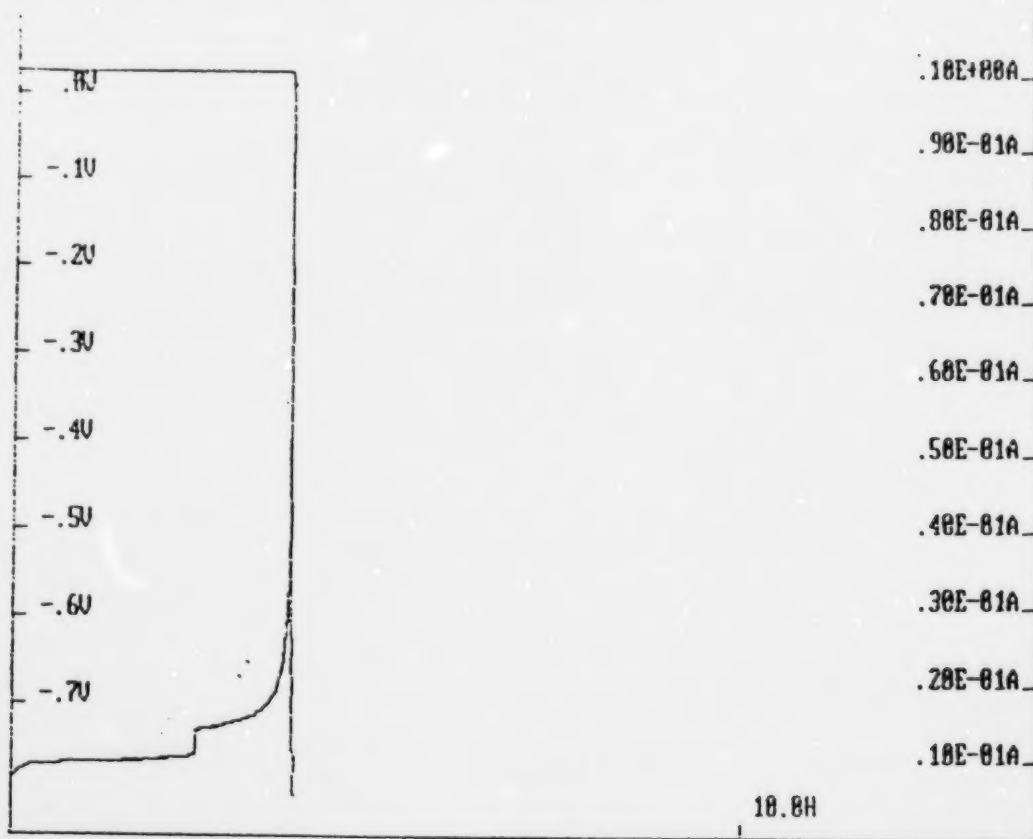
Cu stripping at flow rate 10 cm/min through the fibres and 150 cm/min parallel the startersheet. Current density ≤ 7 mA/cm, potential ≤ 0.9 V.

TEST # 51



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TEST # 52



Test # 53

.5" CARBON FELT; 1200 ppm Cu; 610 ppm NaCN IN; 20 ml/min FLOW

MIN ---	A -	V -	Scm ⁻¹ ---	PPM Cu ---	PPM CN -----
38.400	5.0000E-01	-0.0660	9.6800E-03	1100.0 \	
76.800	5.0000E-01	-0.0080	9.6500E-03	1000.0 \	
115.200	5.0000E-01	0.0310	9.6100E-03	1000.0 -	850
153.600	5.0000E-01	0.0500	9.5400E-03	1000.0 /	
192.000	5.0000E-01	0.0740	9.4600E-03	1000.0 /	
230.400	5.0000E-01	0.0860	9.3800E-03	965.0 \	
268.800	5.0000E-01	0.0860	9.3100E-03	980.0 \	
307.200	5.0000E-01	0.1080	9.2600E-03	980.0 -	1000
345.600	5.0000E-01	0.1100	9.2100E-03	890.0 /	
384.000	5.0000E-01	0.1340	9.1600E-03	925.0 /	
422.400	5.0000E-01	0.1560	9.1100E-03	935.0 \	
460.800	5.0000E-01	0.1790	8.9500E-03	890.0 \	
499.200	5.0000E-01	0.1740	8.9200E-03	945.0 -	1050
537.600	5.0000E-01	0.1880	8.8800E-03	935.0 /	
576.000	5.0000E-01	0.2040	8.8200E-03	905.0 /	
614.400	5.0000E-01	0.1950	8.7800E-03	900.0 \	
652.800	5.0000E-01	0.2140	8.7200E-03	900.0 \	
691.200	5.0000E-01	0.2310	8.6100E-03	915.0 -	1000
729.600	5.0000E-01	0.2240	8.5500E-03	920.0 /	
768.000	5.0000E-01	0.2420	8.4800E-03	925.0 /	
806.400	5.0000E-01	0.2480	8.3900E-03	900.0 \	
844.800	5.0000E-01	0.2440	8.2900E-03	910.0 \	
883.200	5.0000E-01	0.2430	8.2000E-03	905.0 -	950
921.600	5.0000E-01	0.2600	8.1000E-03	930.0 /	
960.000	5.0000E-01	0.2640	7.9900E-03	910.0 /	

Test # 54

.5" CARBON FELT; 1201 ppm Cu IN; 600 ppm NaCN IN; 20 ml/min FLOW

MIN	A	V	Scm ⁻¹	PPM Cu	PPM CN
---	-	-	-----	-----	-----
38.400	4.0000E-01	0.1360	8.4100E-03	1121.0 \	
76.800	4.0000E-01	0.1730	8.0800E-03	1070.0 \	
115.200	4.0000E-01	0.1970	7.8800E-03	1035.0 -	790.0
153.600	4.0000E-01	0.1990	7.7400E-03	1070.0 /	
192.000	4.0000E-01	0.2190	7.6200E-03	1004.0 /	
230.400	4.0000E-01	0.2220	7.4900E-03	1010.0 \	
268.800	4.0000E-01	0.2330	7.3600E-03	969.0 \	
307.200	4.0000E-01	0.2390	7.2600E-03	954.0 -	900.0
345.600	4.0000E-01	0.2680	7.1700E-03	939.0 /	
384.000	4.0000E-01	0.2770	7.1000E-03	944.0 /	
422.400	4.0000E-01	0.2730	7.0200E-03	934.0 \	
460.800	4.0000E-01	0.2800	6.9100E-03	919.0 \	
499.200	4.0000E-01	0.3020	6.6200E-03	944.0 -	1005.0
537.600	4.0000E-01	0.2930	6.2400E-03	919.0 /	
576.000	4.0000E-01	0.2920	6.0400E-03	929.0 /	
614.400	4.0000E-01	0.3190	5.8900E-03	909.0 \	
652.800	4.0000E-01	0.3240	5.7500E-03	909.0 \	
691.200	4.0000E-01	0.3120	5.6200E-03	929.0 -	1000.0
729.600	4.0000E-01	0.3330	5.5400E-03	934.0 /	
768.000	4.0000E-01	0.3370	5.5400E-03	944.0 /	
806.400	4.0000E-01	0.3230	5.6800E-03	949.0 \	
844.800	4.0000E-01	0.3400	5.8900E-03	929.0 \	
883.200	4.0000E-01	0.3560	6.1000E-03	964.0 -	925.0
921.600	4.0000E-01	0.3580	6.2800E-03	954.0 /	
960.000	4.0000E-01	0.3280	6.4200E-03	949.0 /	

Test # 55

.5" CARBON FELT; 1060 ppm Cu IN; 420 ppm CN IN; 20 ml/min FLOW

MIN ---	A -	V -	Scm ⁻¹ -----	PPM Cu -----	PPM CN -----
38.400	5.0000E-01	0.1170	7.9200E-03	889.0 \	650
76.800	5.0000E-01	0.1590	7.7200E-03	889.0 \	
115.200	5.0000E-01	0.1870	7.5600E-03	883.0 -	
153.600	5.0000E-01	0.1900	7.4600E-03	869.0 /	
192.000	5.0000E-01	0.1820	7.3700E-03	869.0 /	850
230.400	5.0000E-01	0.2180	7.2500E-03	833.0 \	
268.800	5.0000E-01	0.2380	7.1500E-03	818.0 \	
307.200	5.0000E-01	0.2340	7.0100E-03	828.0 -	
345.600	5.0000E-01	0.2640	6.8800E-03	838.0 /	860
384.000	5.0000E-01	0.2490	6.7900E-03	808.0 /	
422.400	5.0000E-01	0.2560	6.6900E-03	793.0 \	
460.800	5.0000E-01	0.2960	6.5300E-03	783.0 \	
499.200	5.0000E-01	0.2870	6.3400E-03	783.0 -	840
537.600	5.0000E-01	0.2860	6.2600E-03	773.0 /	
576.000	5.0000E-01	0.2970	6.2200E-03	742.0 /	
614.400	5.0000E-01	0.3030	6.2000E-03	768.0 \	
652.800	5.0000E-01	0.3050	6.1600E-03	758.0 \	840
691.200	5.0000E-01	0.3210	6.1300E-03	742.0 -	
729.600	5.0000E-01	0.3210	6.0900E-03	747.0 /	
768.000	5.0000E-01	0.3350	6.0100E-03	737.0 /	
806.400	5.0000E-01	0.3570	5.9300E-03	737.0 \	840
844.800	5.0000E-01	0.3470	5.8600E-03	722.0 \	
883.200	5.0000E-01	0.3410	5.8000E-03	732.0 -	
921.600	5.0000E-01	0.3500	5.7200E-03	758.0 /	
960.000	5.0000E-01	0.3470	5.6400E-03	783.0 /	

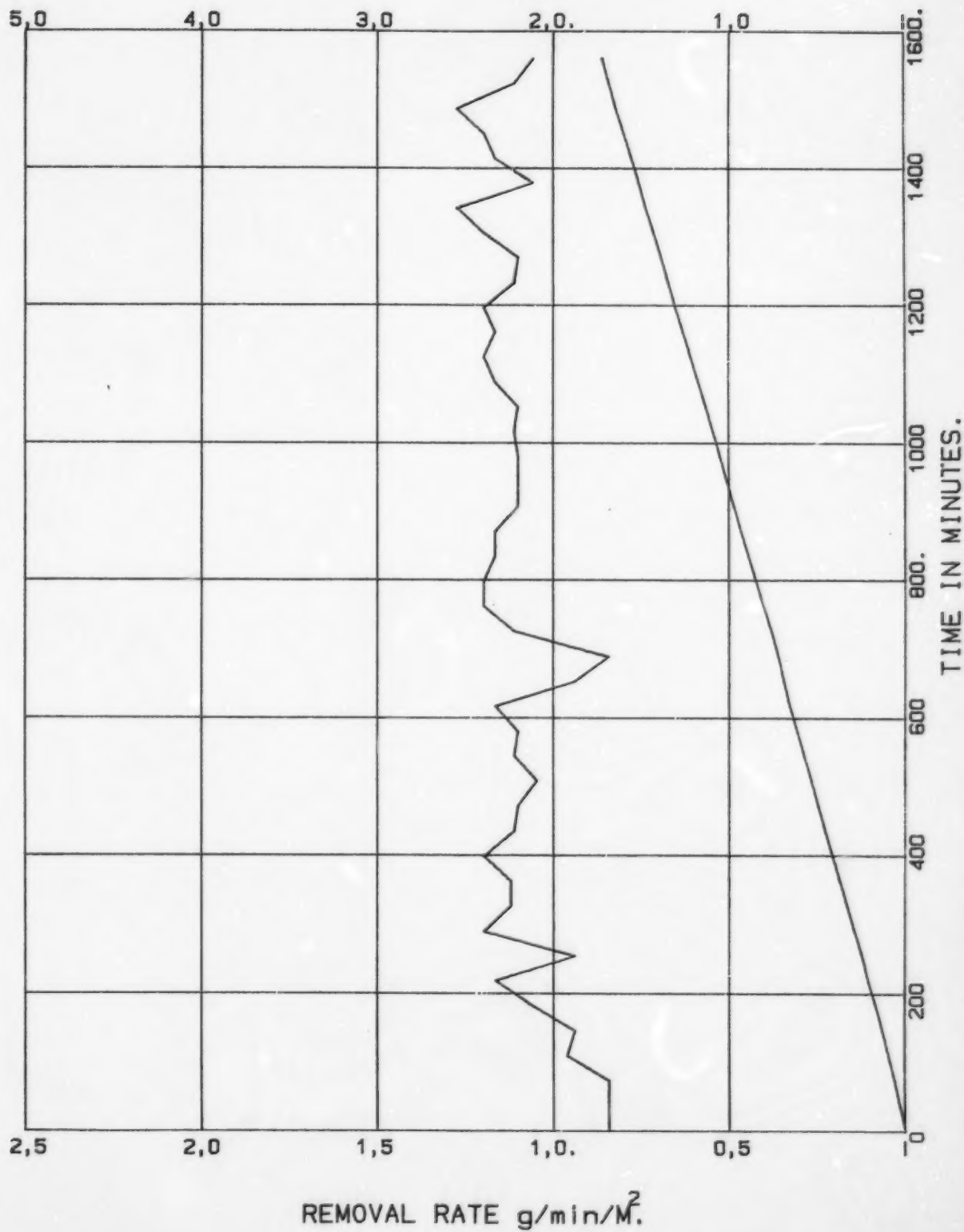
Test # 56

.5" CARBON FELT; 1060 ppm Cu IN; 460 ppm CN IN; 20 ml/min FLOW

MIN ---	A -	V -	Scm ⁻¹ -----	PPM Cu -----	PPM CN -----
38.400	4.0000E-01	0.2840	7.8200E-03	959.0 \	
76.800	4.0000E-01	0.3060	7.6000E-03	909.0 \	
115.200	4.0000E-01	0.3010	7.3700E-03	909.0 -	800
153.600	4.0000E-01	0.3010	7.1400E-03	884.0 /	
192.000	4.0000E-01	0.3260	7.0000E-03	890.0 /	
230.400	4.0000E-01	0.3260	7.0000E-03	884.0 \	
268.800	4.0000E-01	0.3260	7.0100E-03	863.0 \	
307.200	4.0000E-01	0.3270	6.9600E-03	838.0 -	800
345.600	4.0000E-01	0.3360	6.9400E-03	818.0 /	
384.000	4.0000E-01	0.3770	6.8800E-03	834.0 /	
422.400	4.0000E-01	0.3570	6.7800E-03	834.0 \	
460.800	4.0000E-01	0.3720	6.6600E-03	838.0 \	
499.200	4.0000E-01	0.3730	6.5400E-03	808.0 -	850
537.600	4.0000E-01	0.3880	6.4500E-03	787.0 /	
576.000	4.0000E-01	0.3860	6.2400E-03	773.0 /	
614.400	4.0000E-01	0.4020	6.0700E-03	788.0 \	
652.800	4.0000E-01	0.4020	5.9800E-03	784.0 \	
691.200	4.0000E-01	0.4000	5.6800E-03	792.0 -	900
729.600	4.0000E-01	0.3950	5.5900E-03	767.0 /	
768.000	4.0000E-01	0.4030	5.7600E-03	814.0 /	
806.400	4.0000E-01	0.4300	5.7200E-03	798.0 \	
844.800	4.0000E-01	0.4100	5.6600E-03	783.0 \	
883.200	4.0000E-01	0.4230	5.6200E-03	808.0 -	900
921.600	4.0000E-01	0.4280	5.5800E-03	788.0 /	
960.000	4.0000E-01	0.3970	5.5100E-03	803.0 /	

APPENDIX "B"

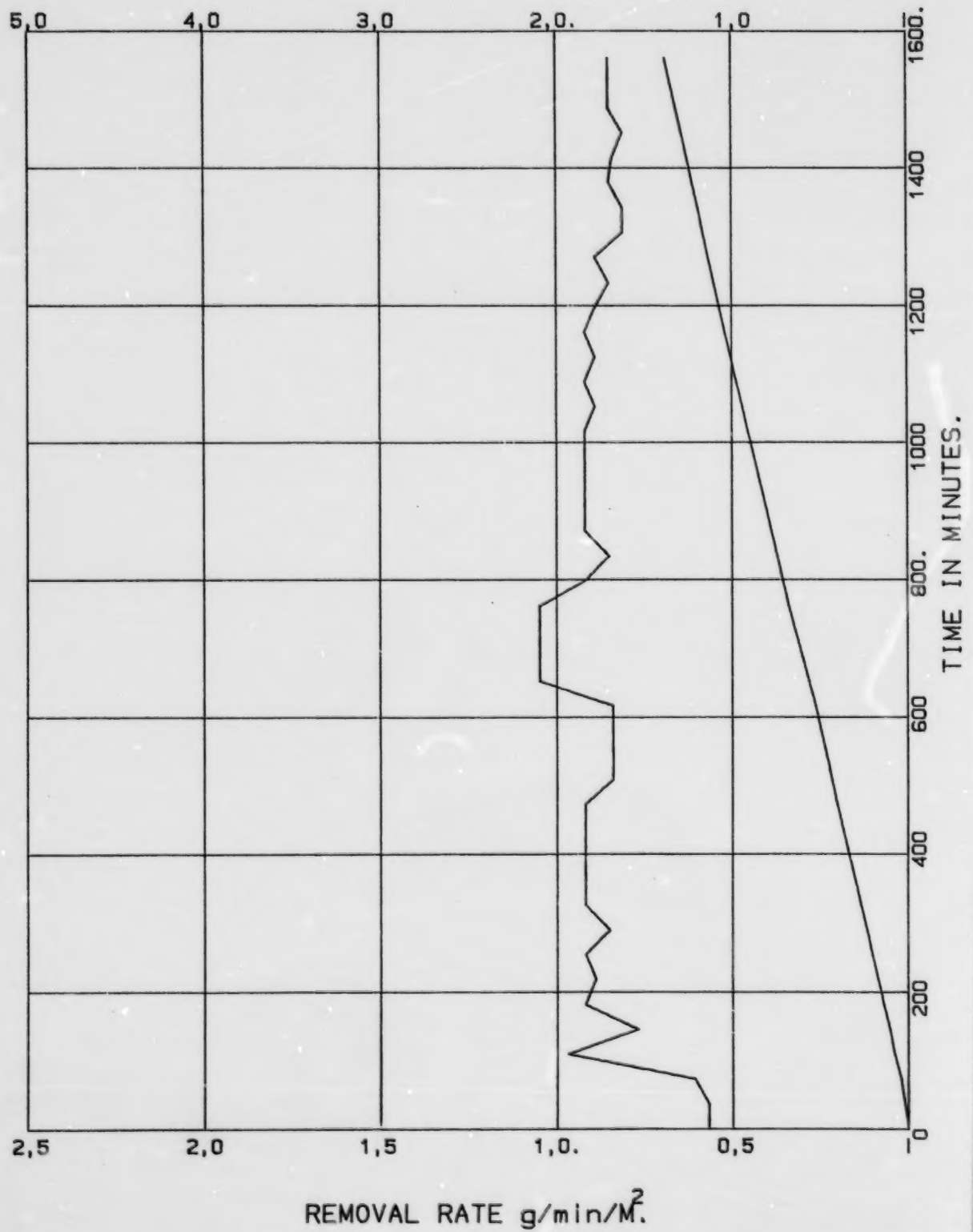
QUANTITY PLATED Kg/M^2



TEST # 1.

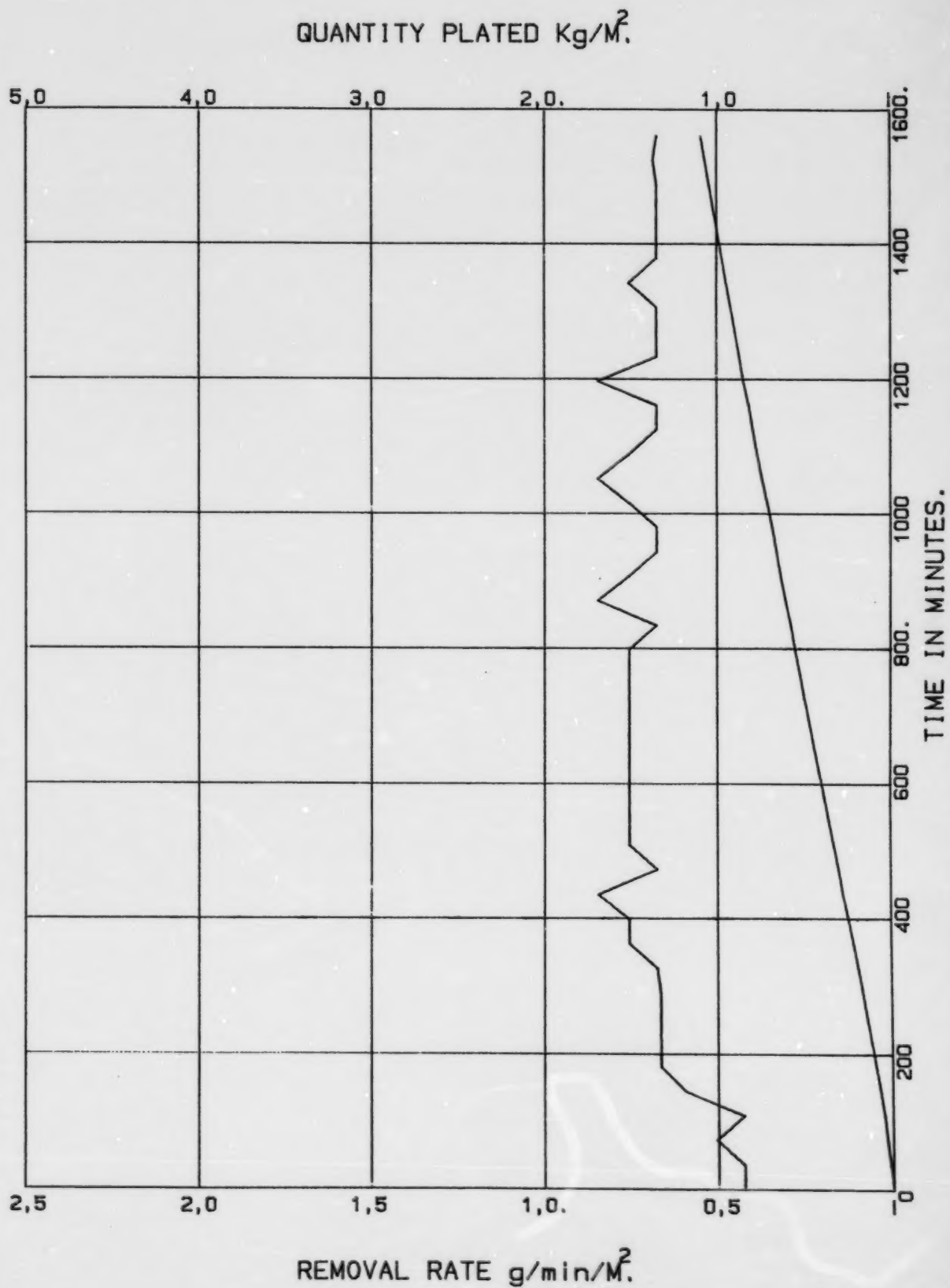
CELEC INC.

QUANTITY PLATED Kg/M^2



TEST # 2.

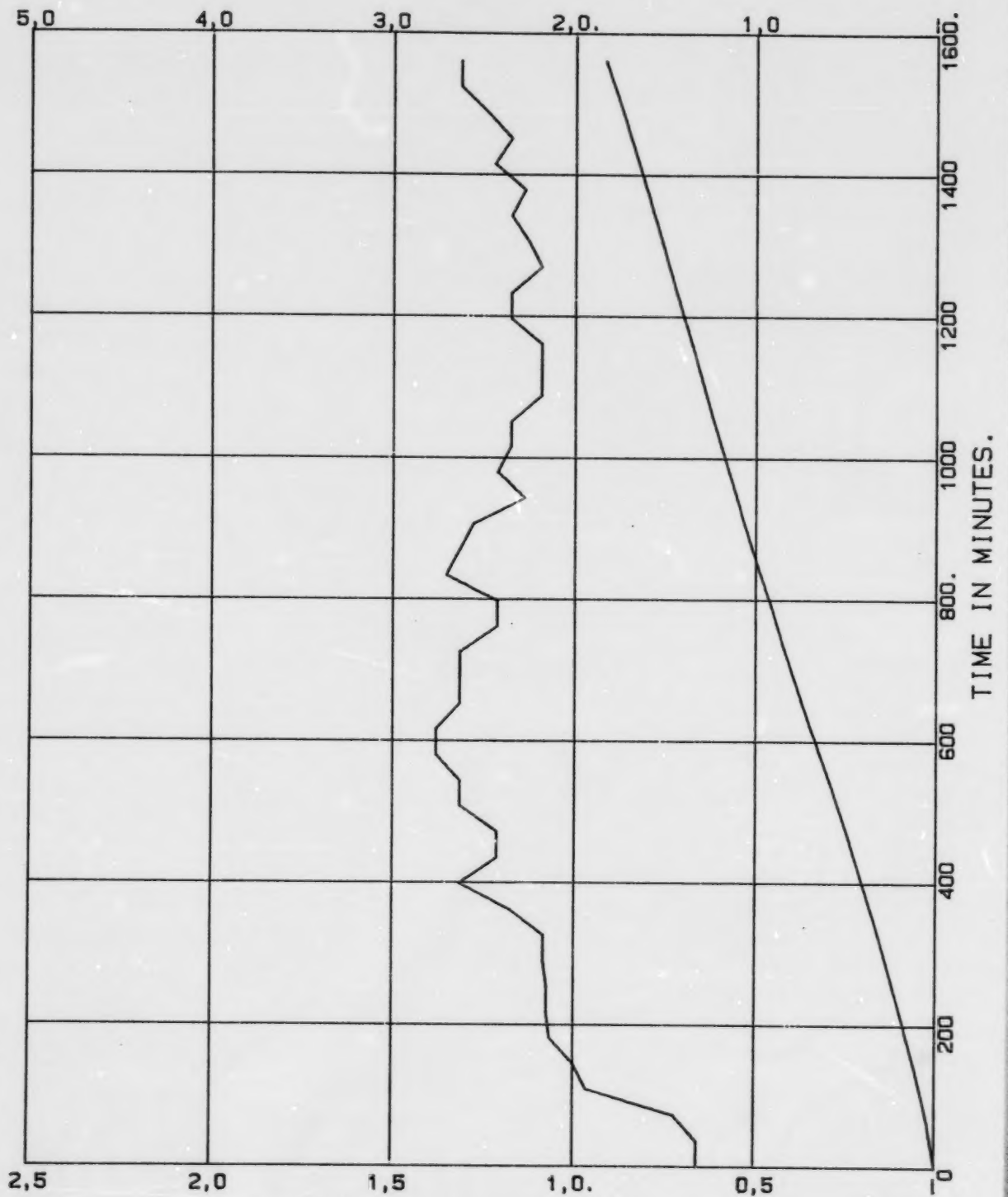
CELEC INC.



TEST # 3.

CELEC INC.

QUANTITY PLATED Kg/M^2



REMOVAL RATE g/min/M^2

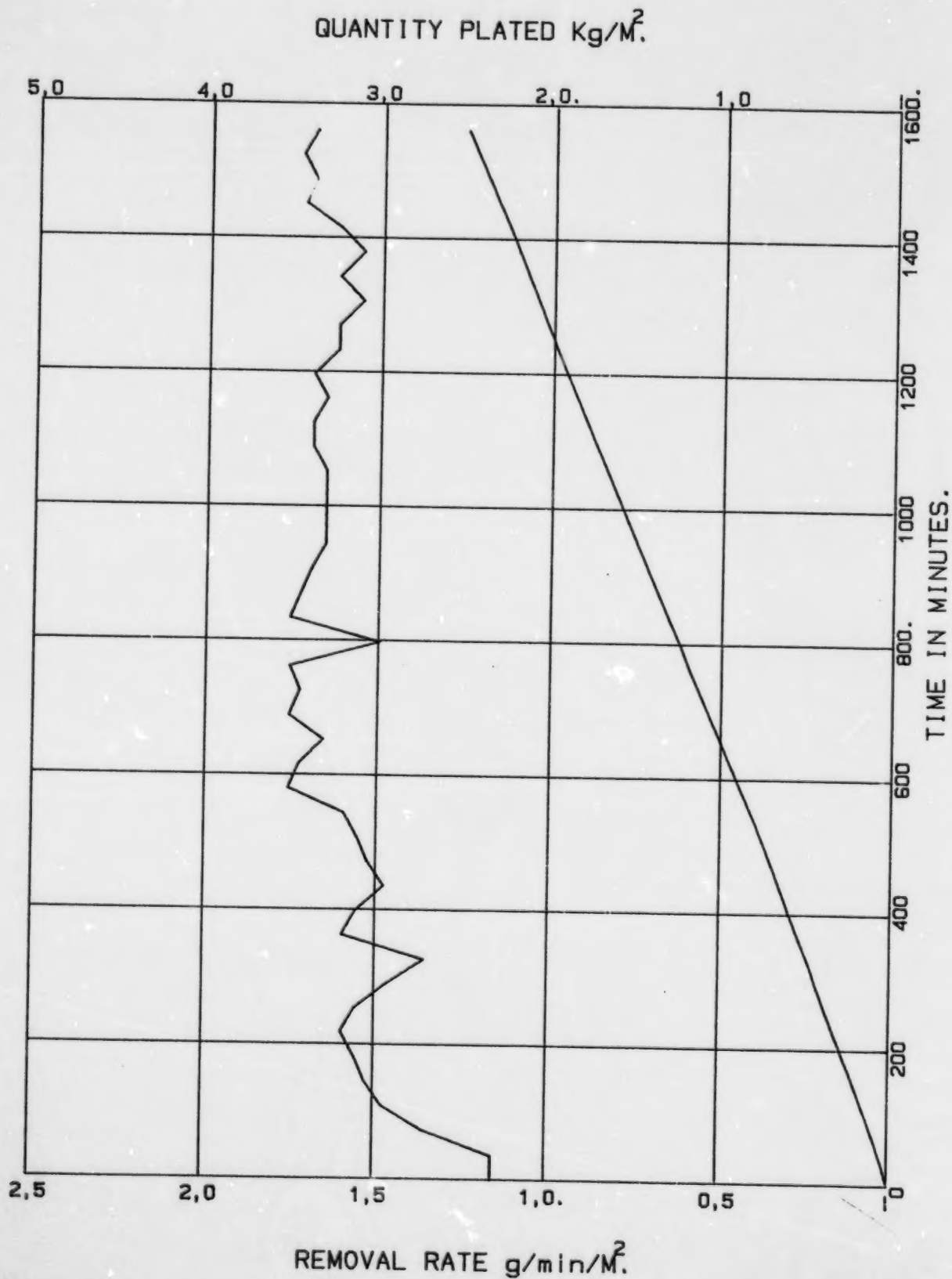
TEST # 4.

CELEC INC.



TEST # 5.

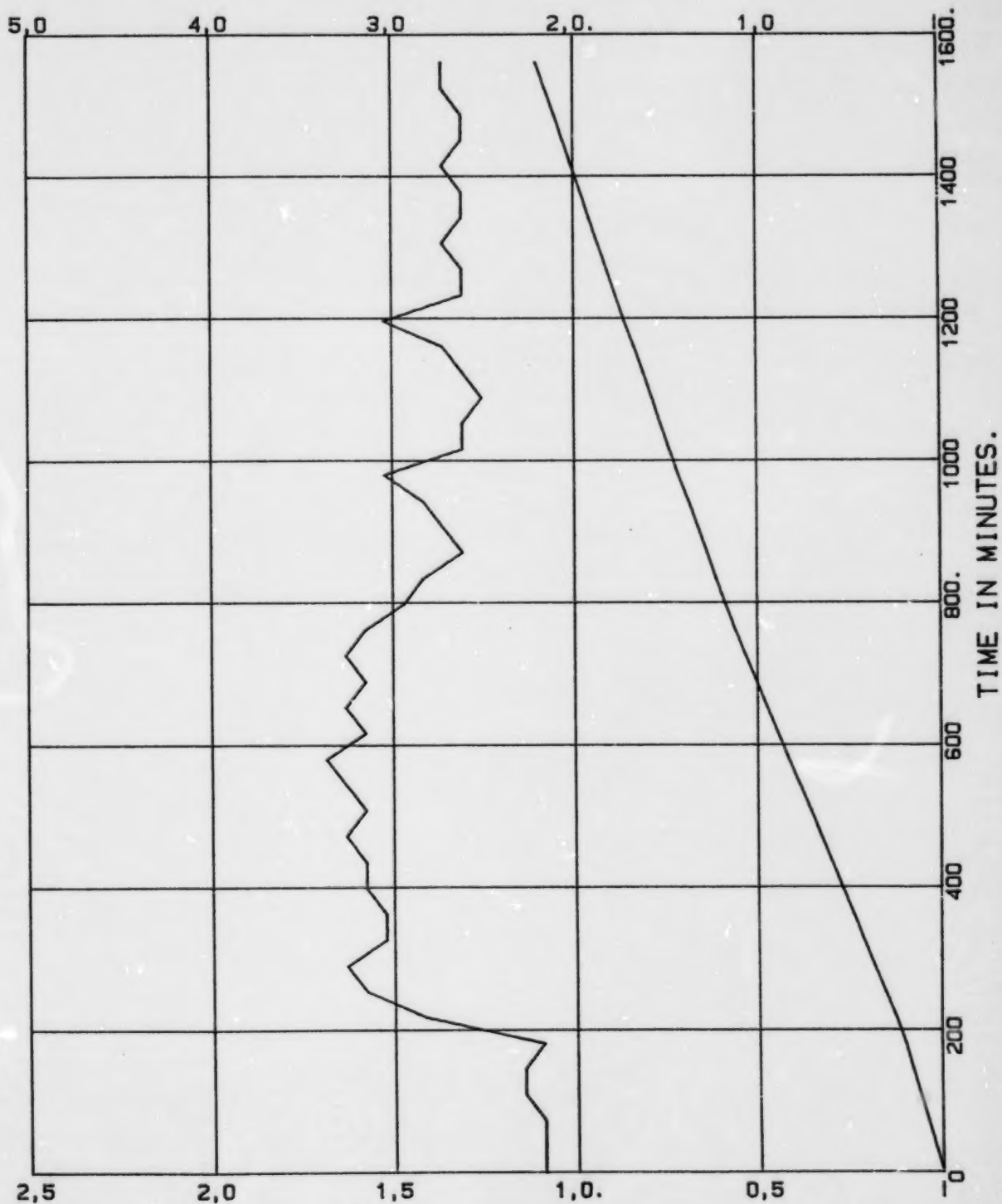
CELEC INC.



TEST # 6.

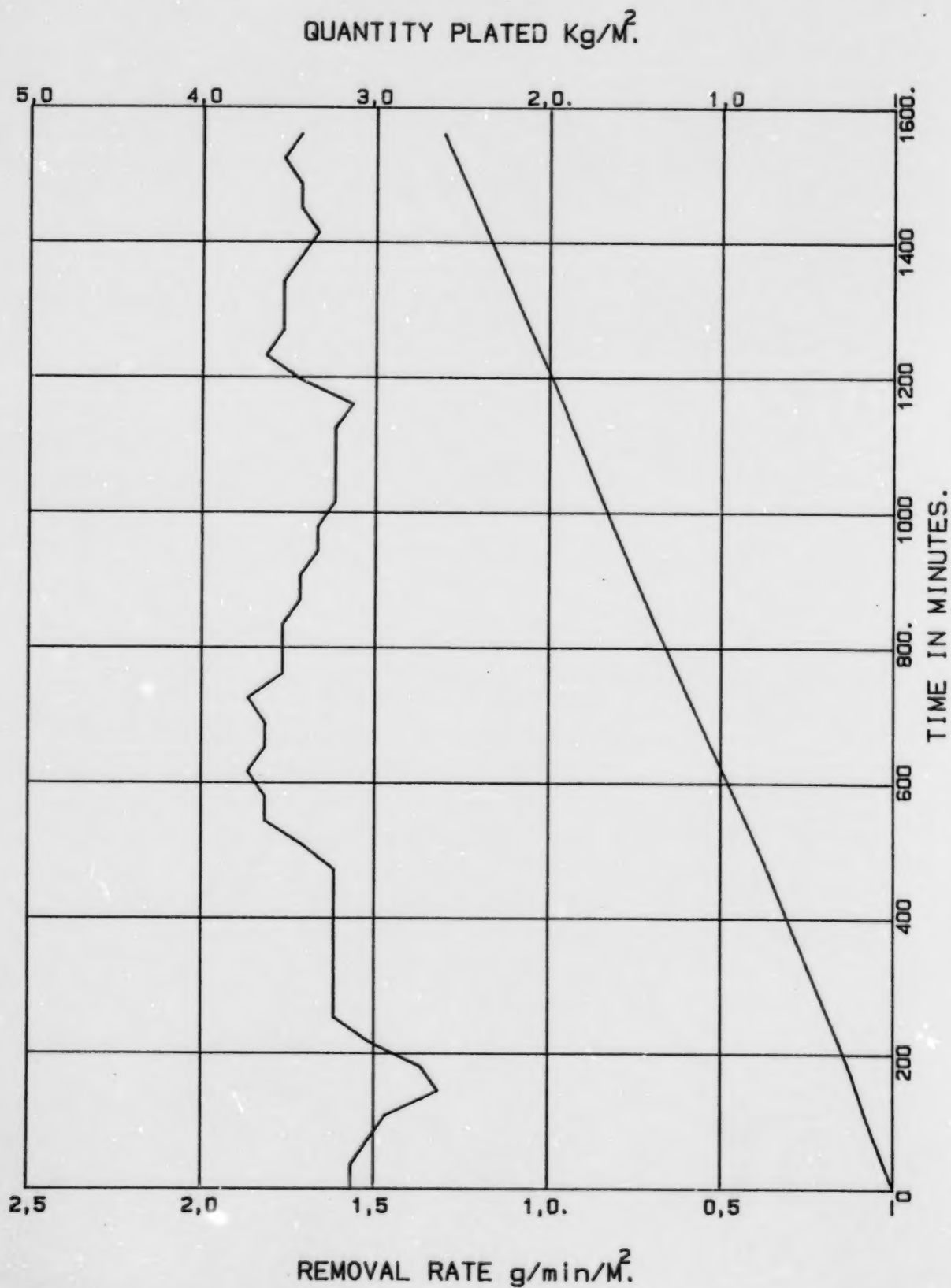
CELEC INC.

QUANTITY PLATED Kg/M^2 .



TEST # 7.

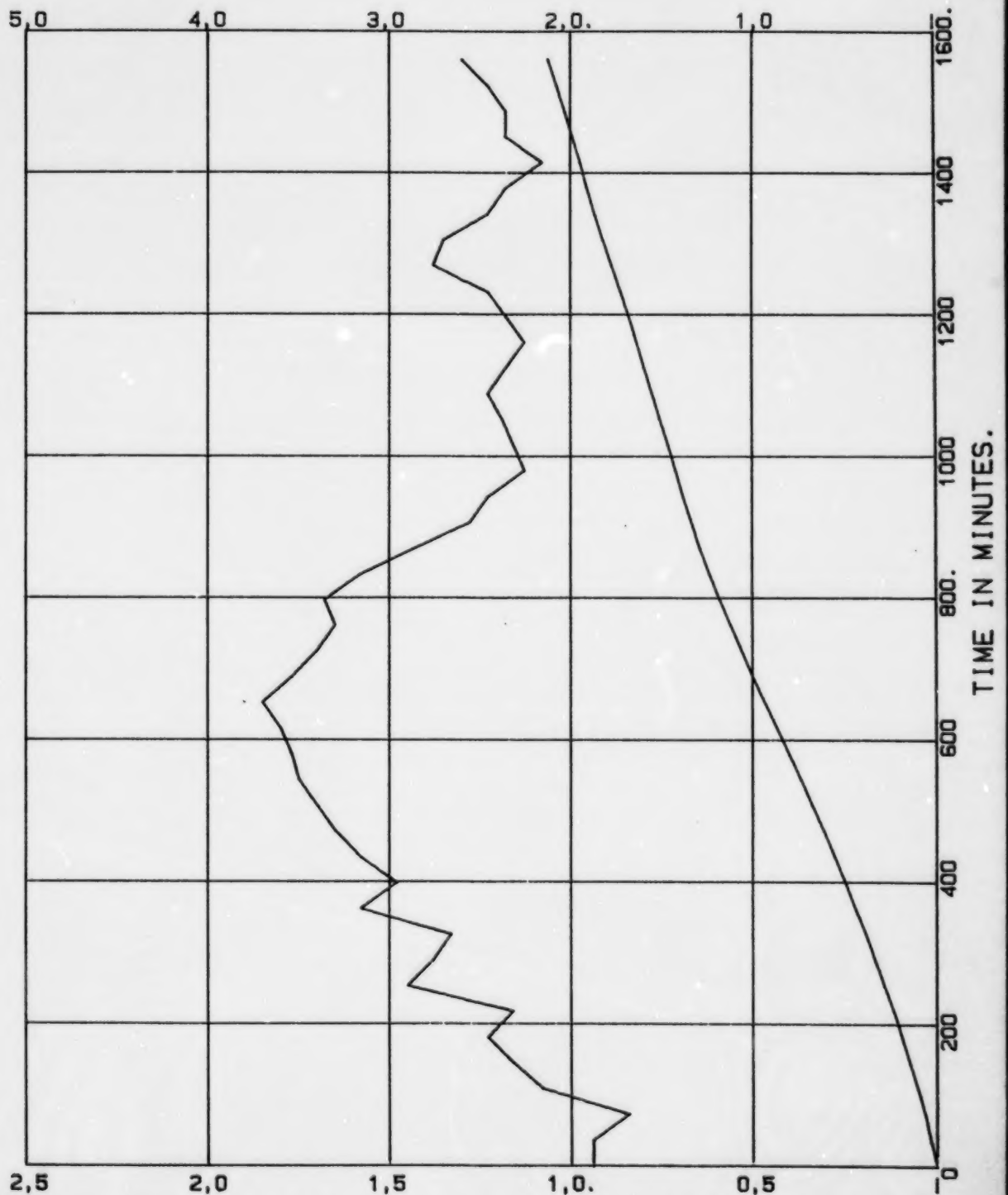
CELEC INC.



TEST # 8.

CELEC INC.

QUANTITY PLATED Kg/M^2 .

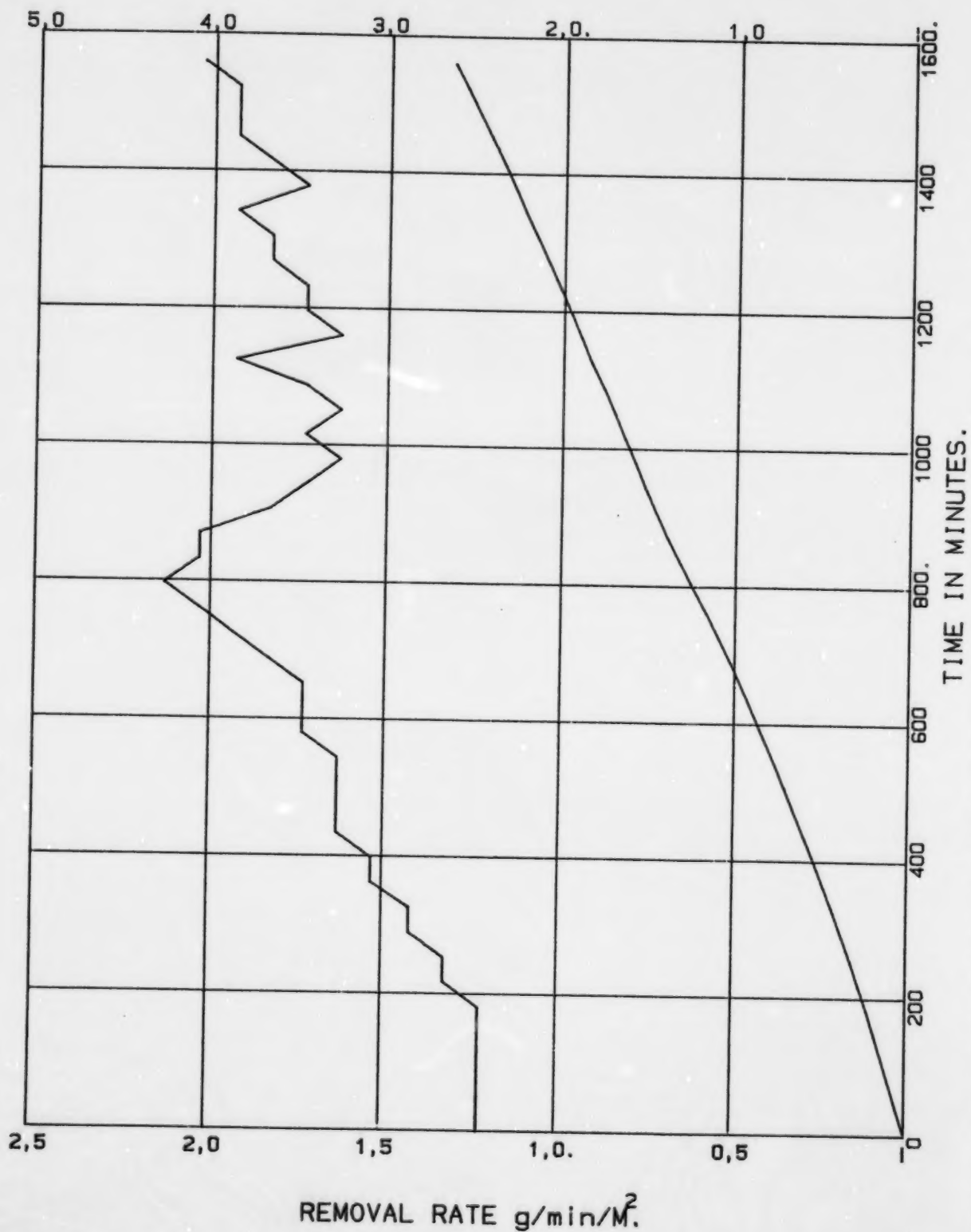


REMOVAL RATE g/min/M^2 .

TEST # 9.

CELEC INC.

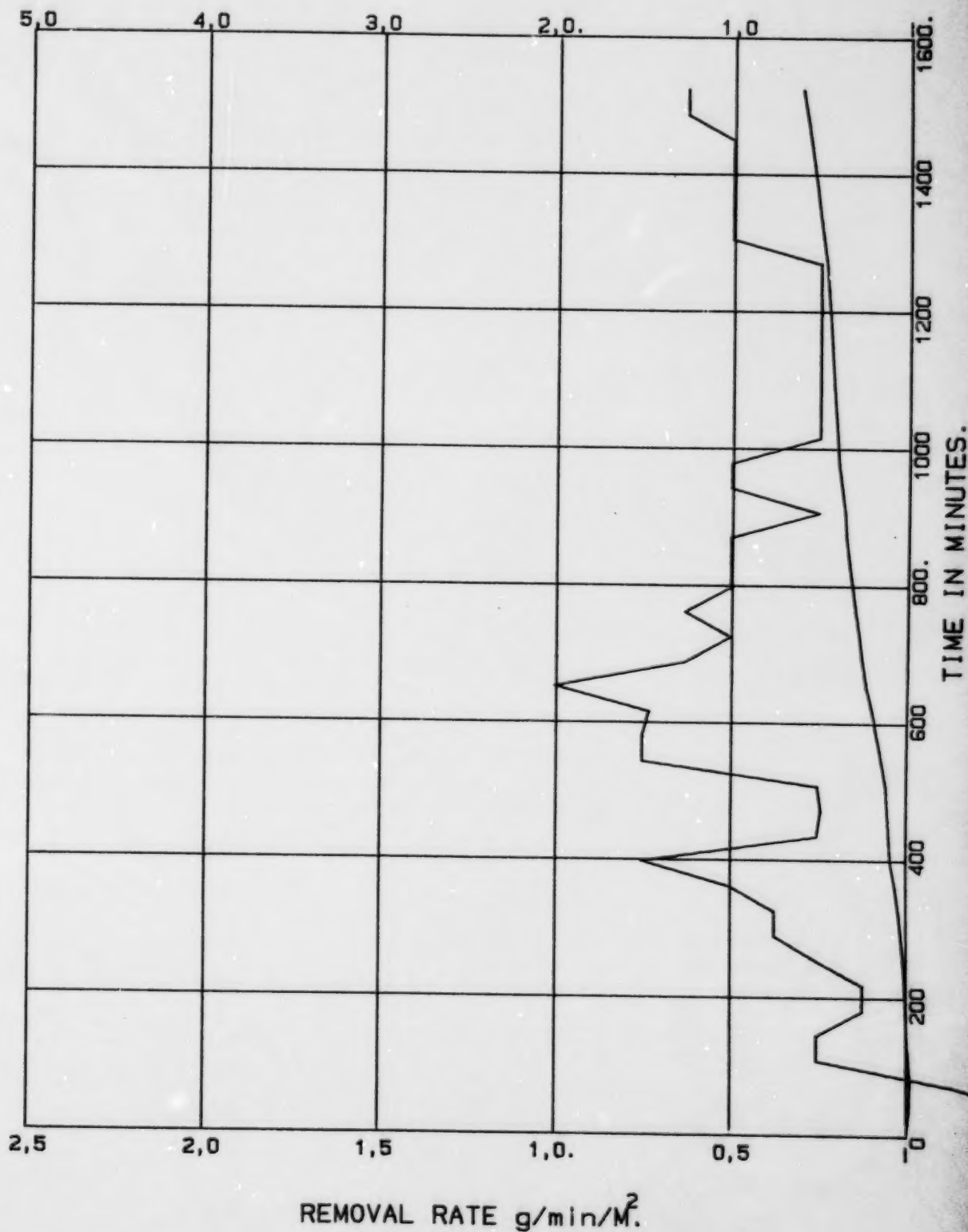
QUANTITY PLATED Kg/M^2



TEST # 10.

CELEC INC.

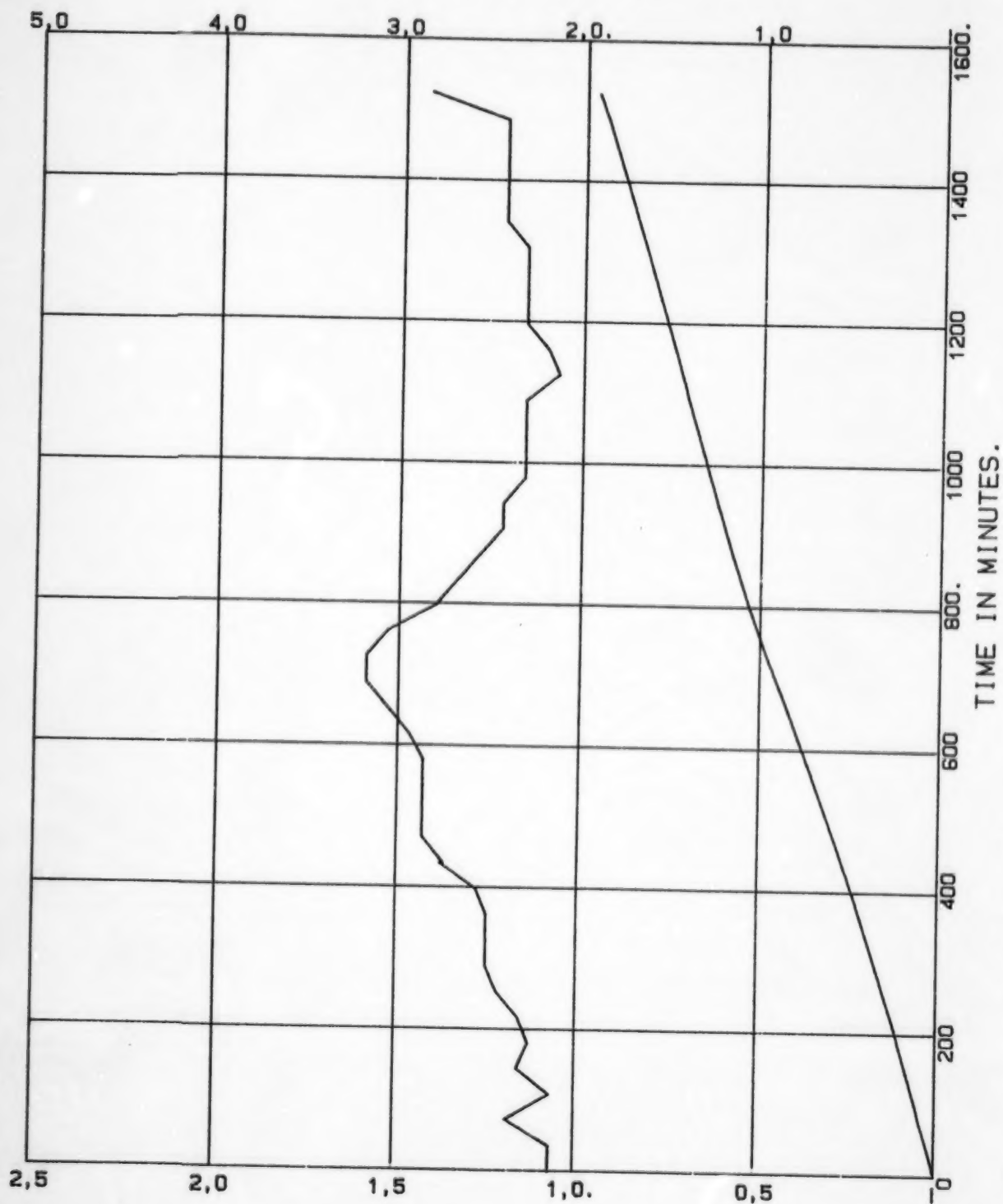
QUANTITY PLATED Kg/M^2



TEST # 11.

CELEC INC.

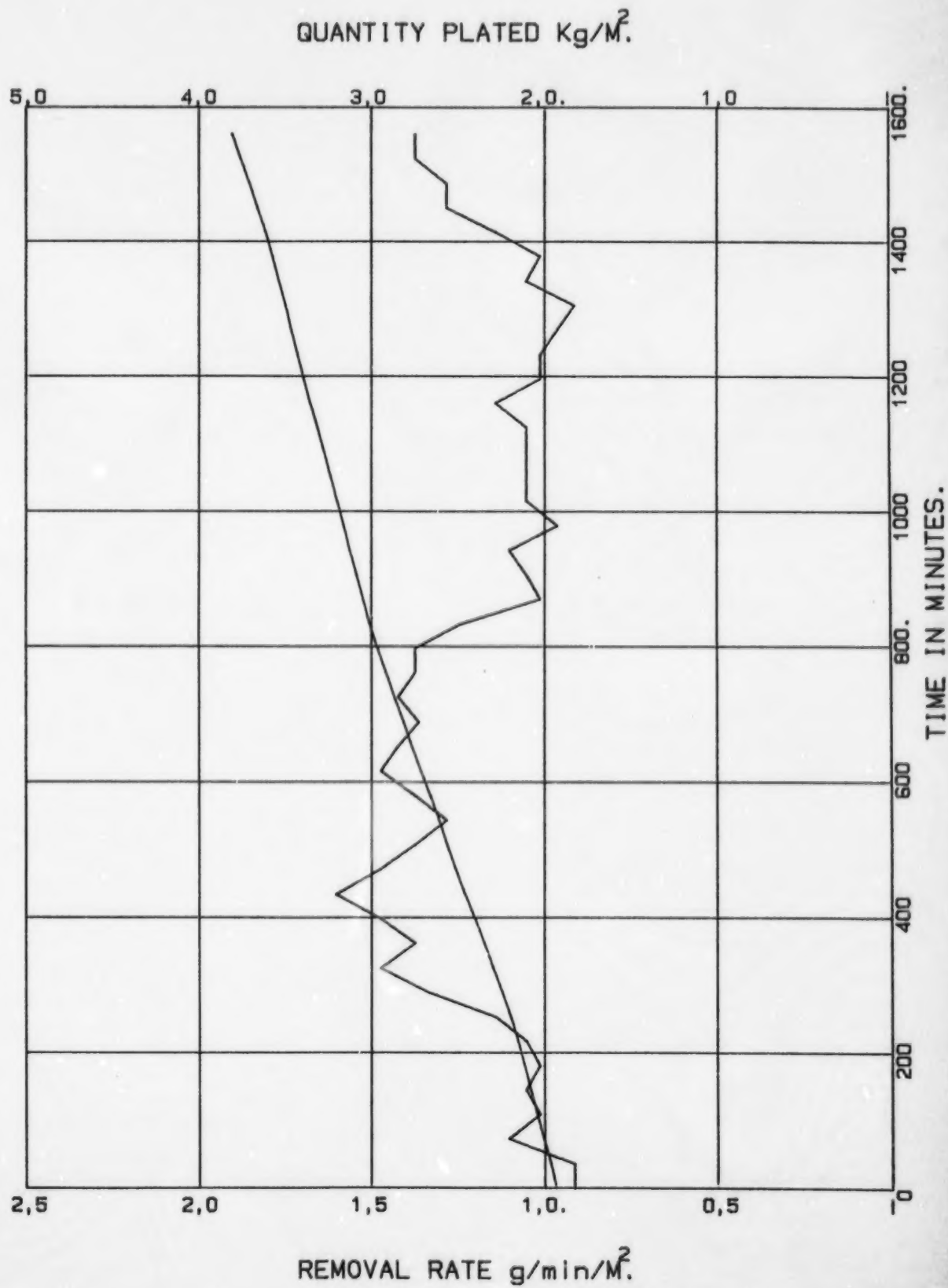
QUANTITY PLATED Kg/M^2



REMOVAL RATE g/min/M^2

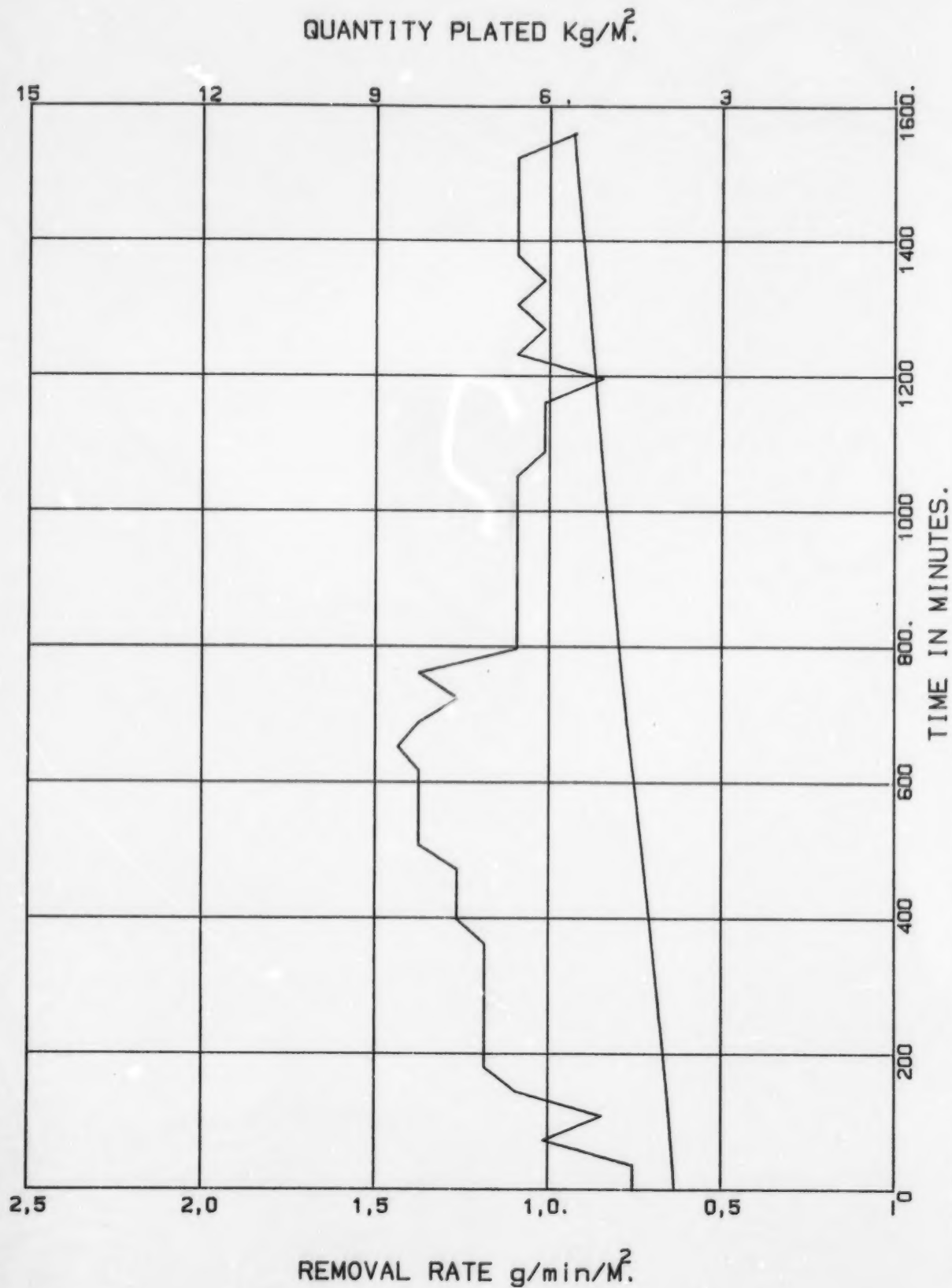
TEST # 12.

CELEC INC.



TEST # 13.

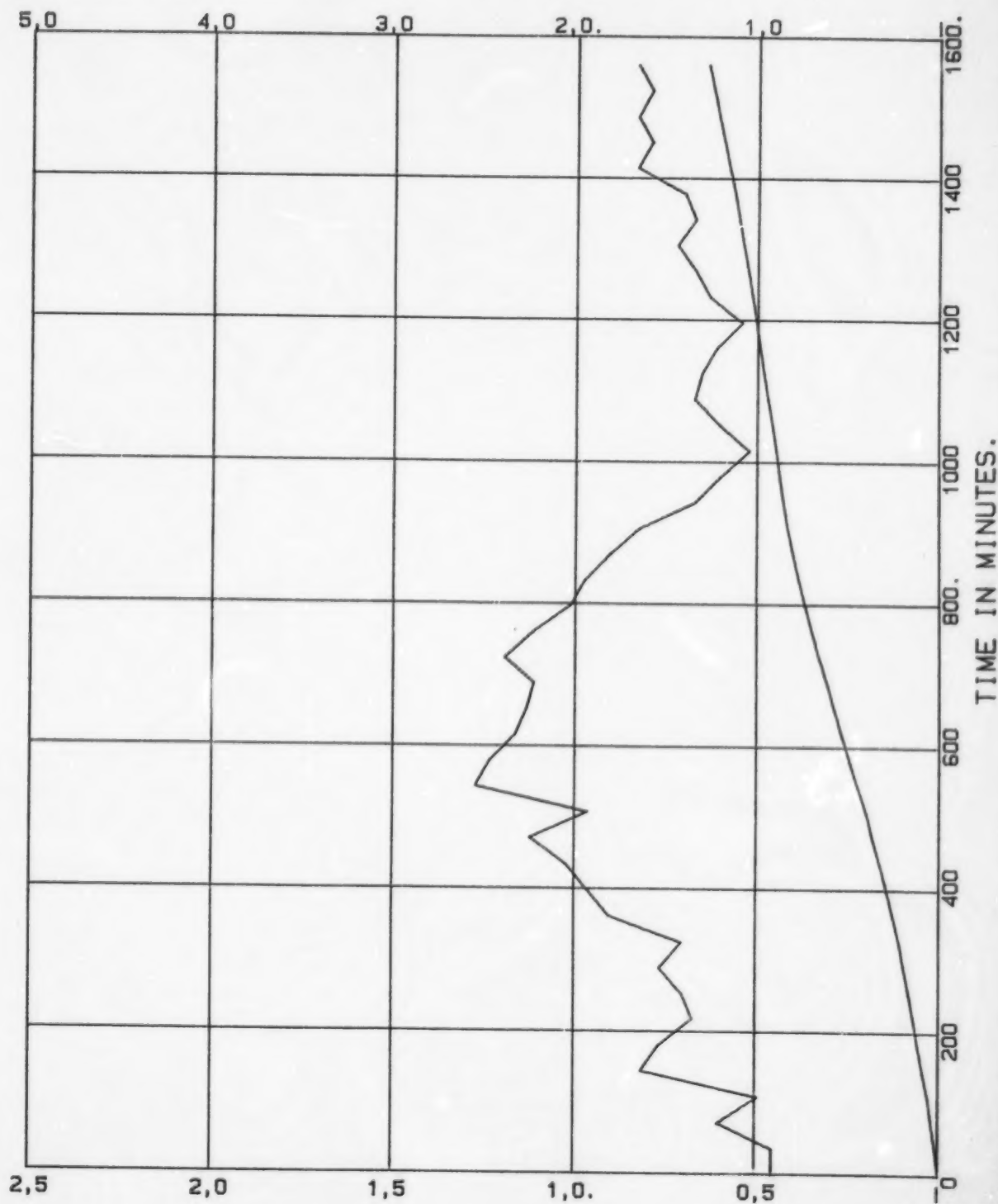
CELEC INC.



TEST # 14.

CELEC INC.

QUANTITY PLATED Kg/M^2



TEST # 15.

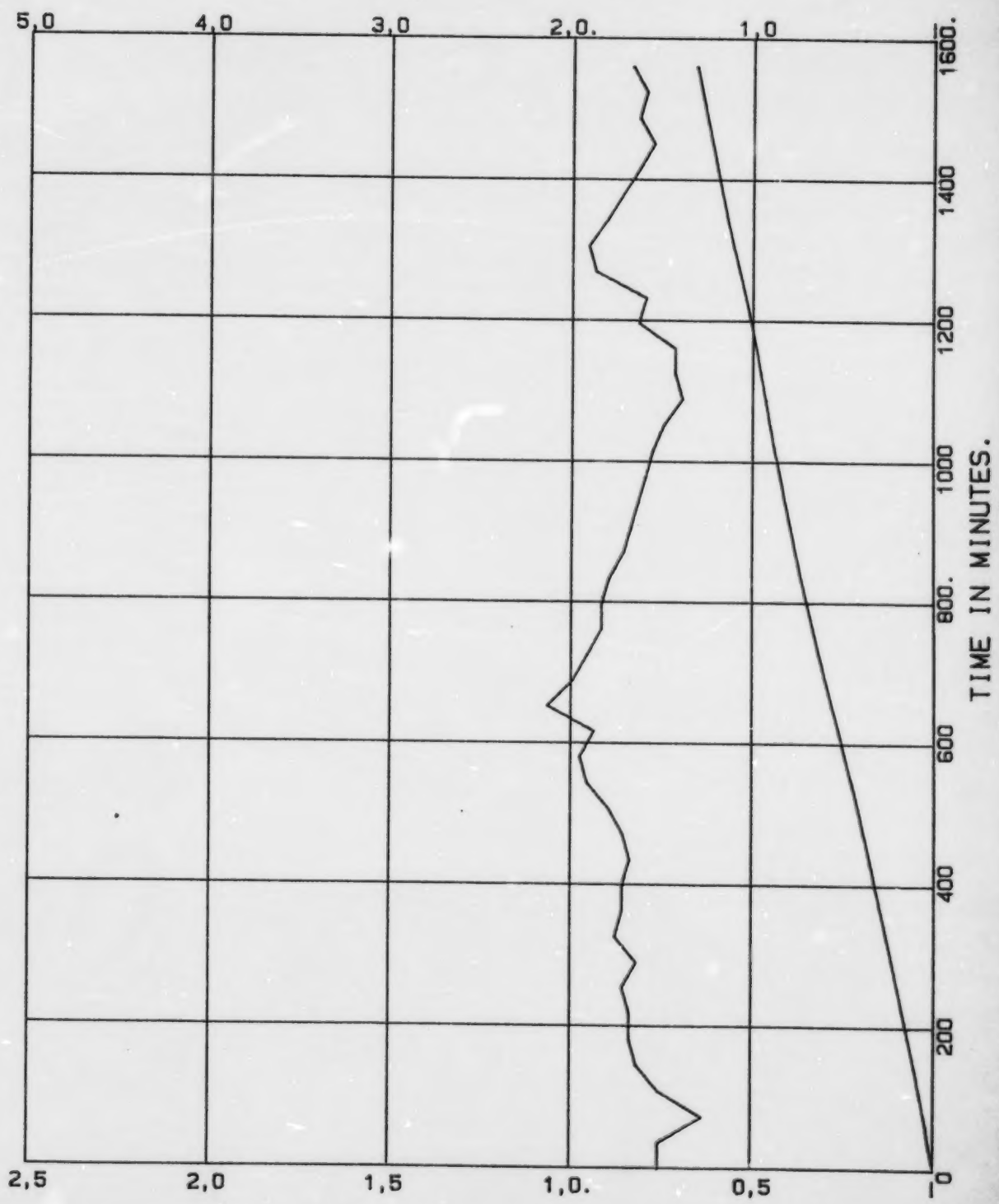
CELEC INC.



TEST # 16.

CELEC INC.

QUANTITY PLATED Kg/M^2

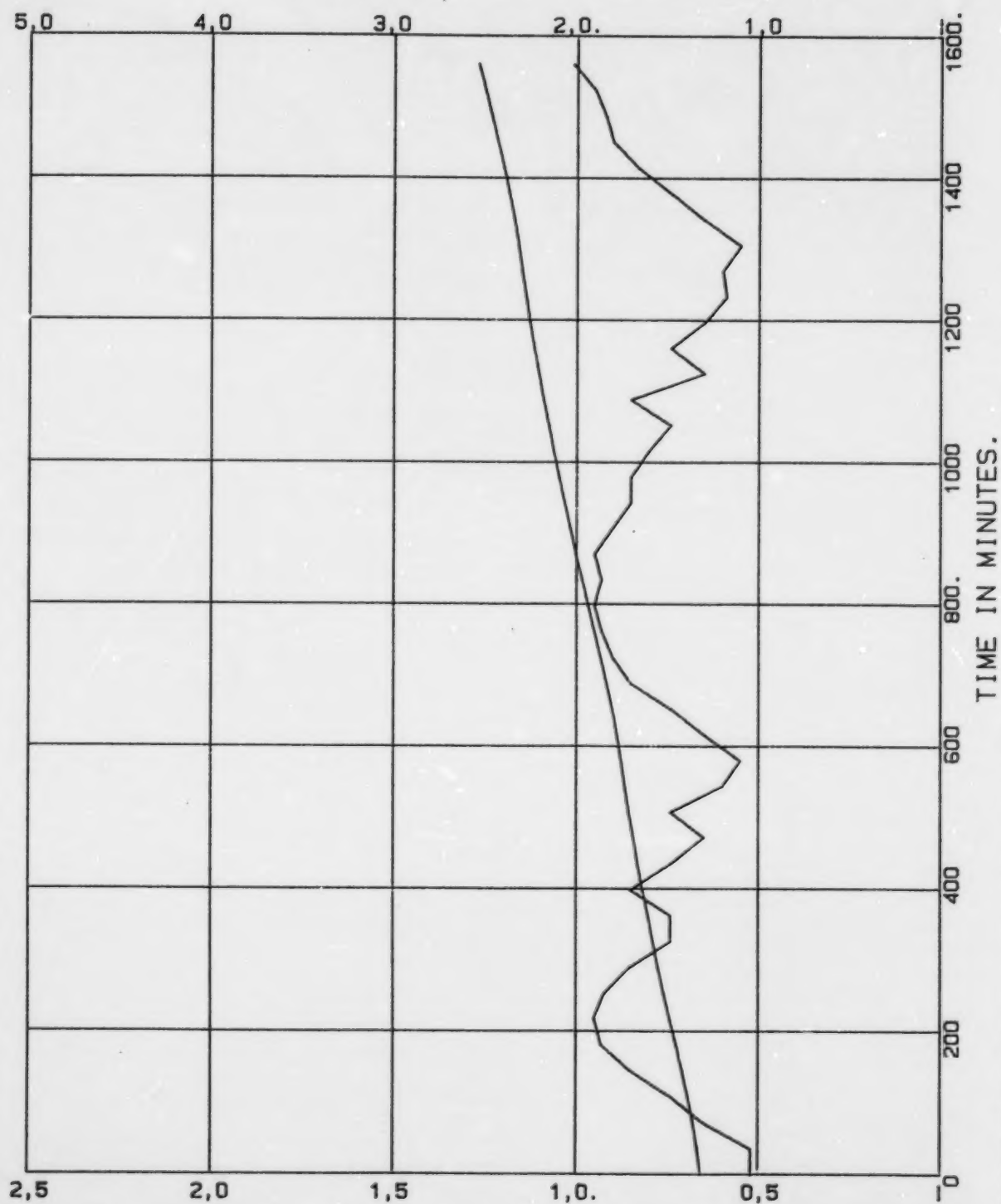


REMOVAL RATE g/min/M^2

TEST # 17.

CELEC INC.

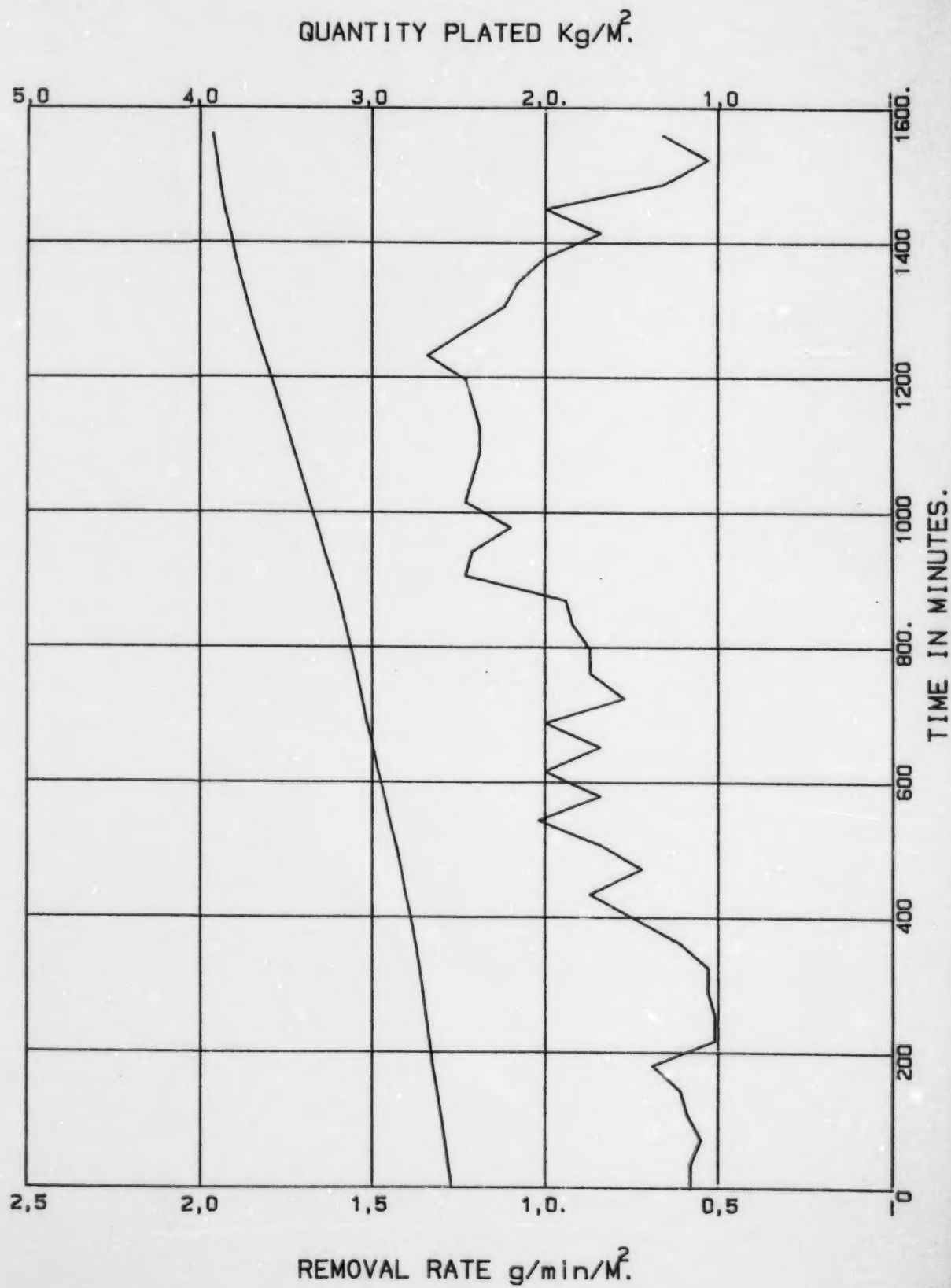
QUANTITY PLATED Kg/M^2



REMOVAL RATE g/min/M^2

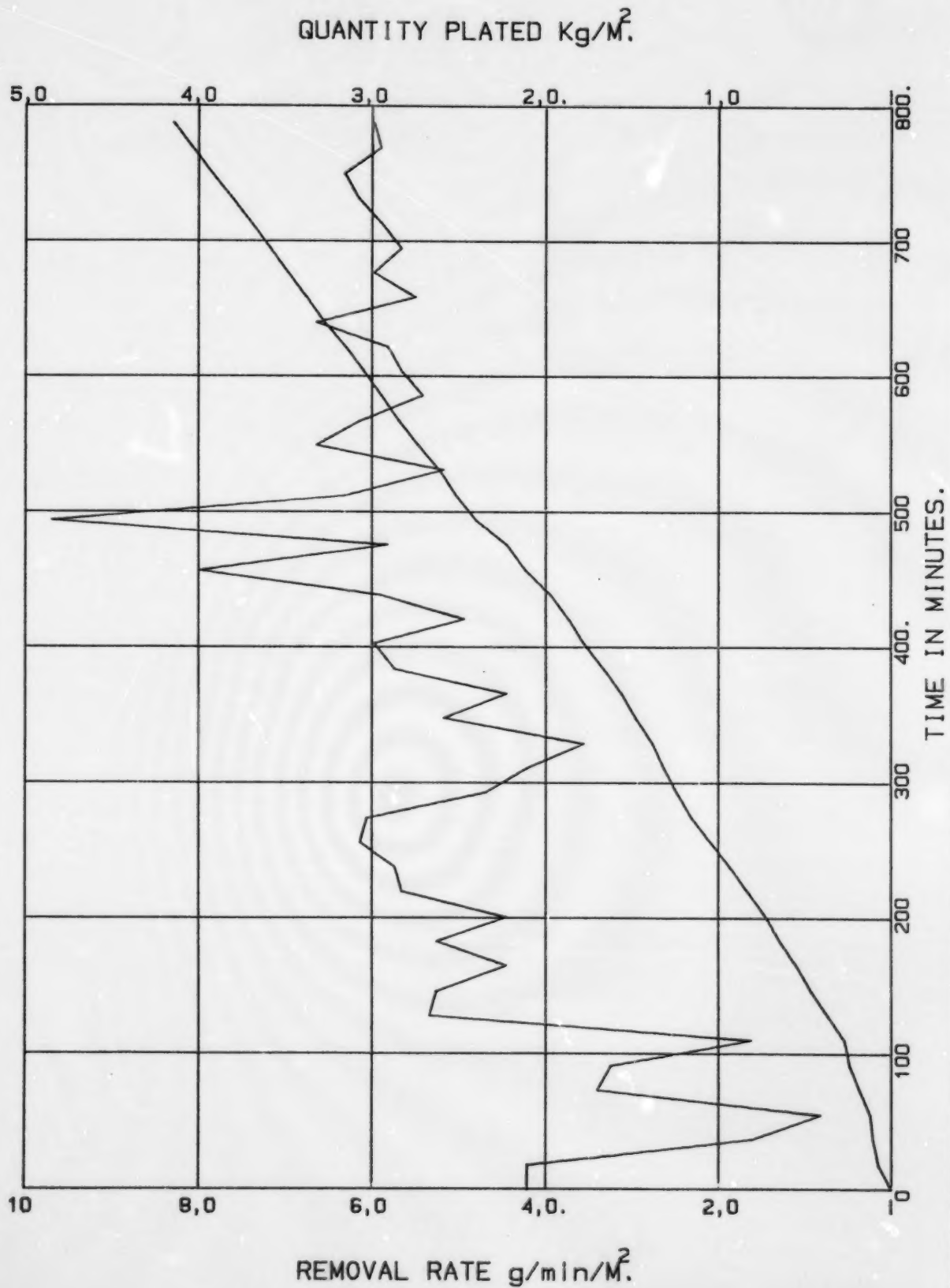
TEST # 18.

CELEC INC.



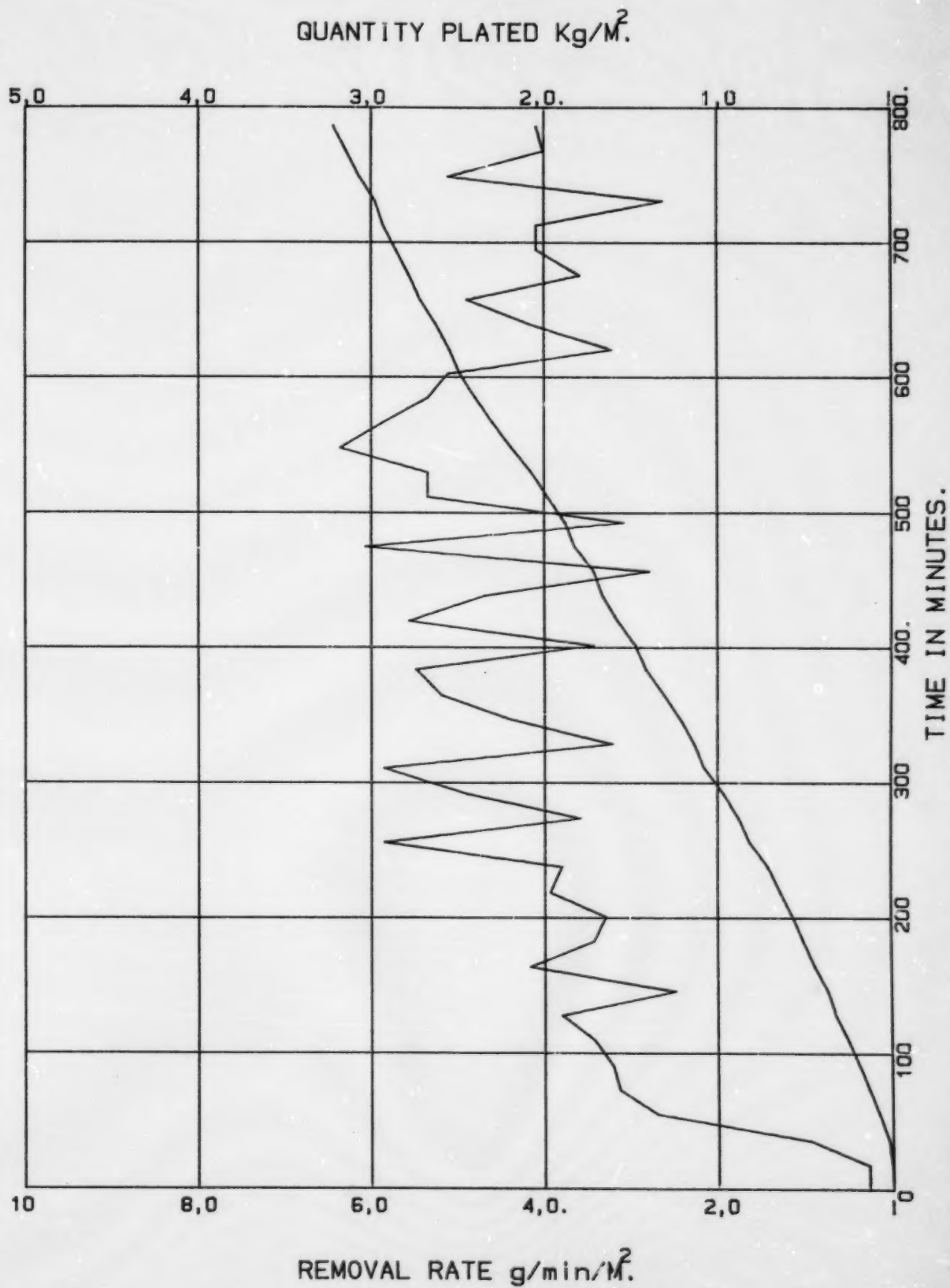
TEST # 19.

CELEC INC.



TEST # 20.

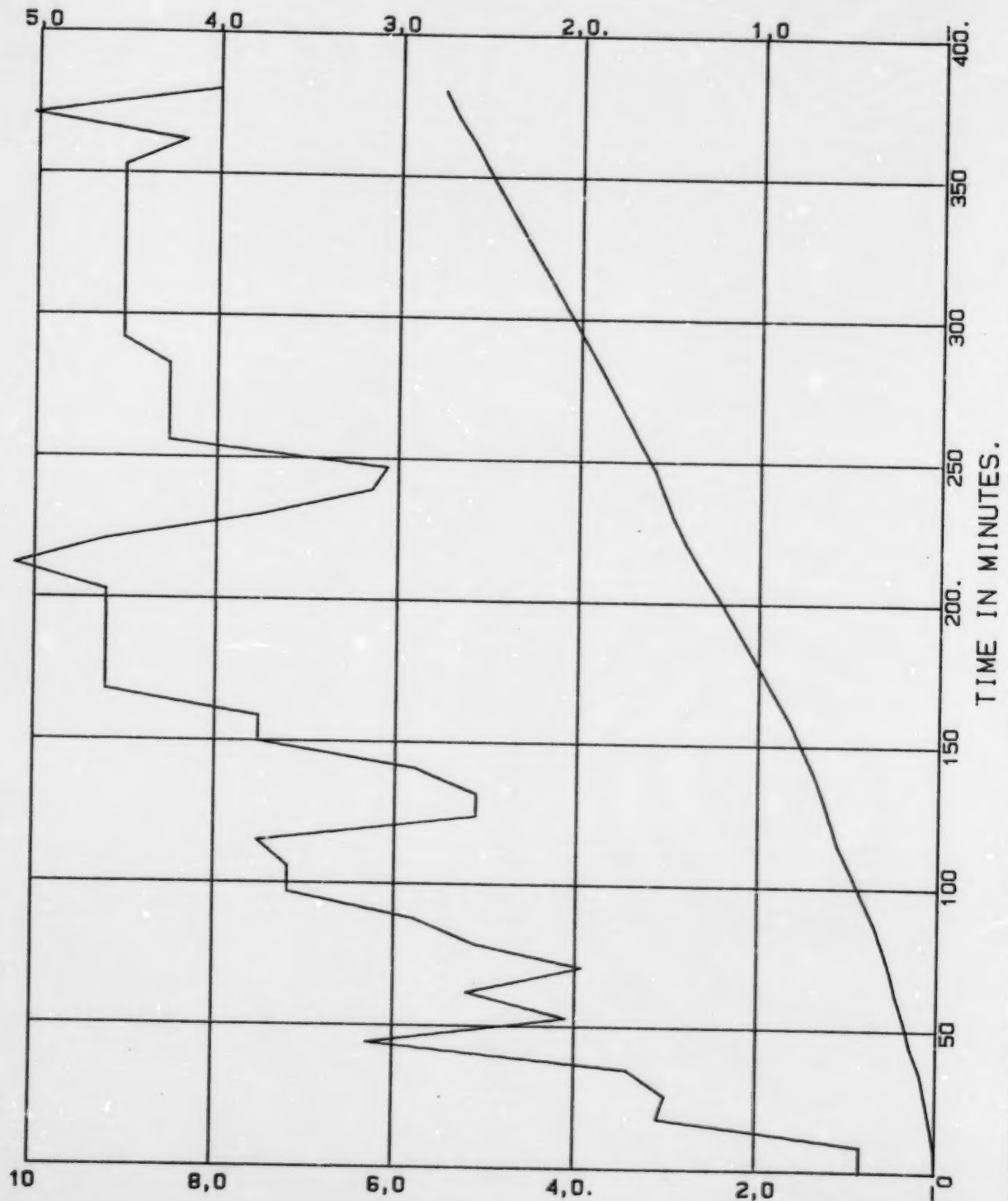
CELEC INC.



TEST # 21.

CELEC INC.

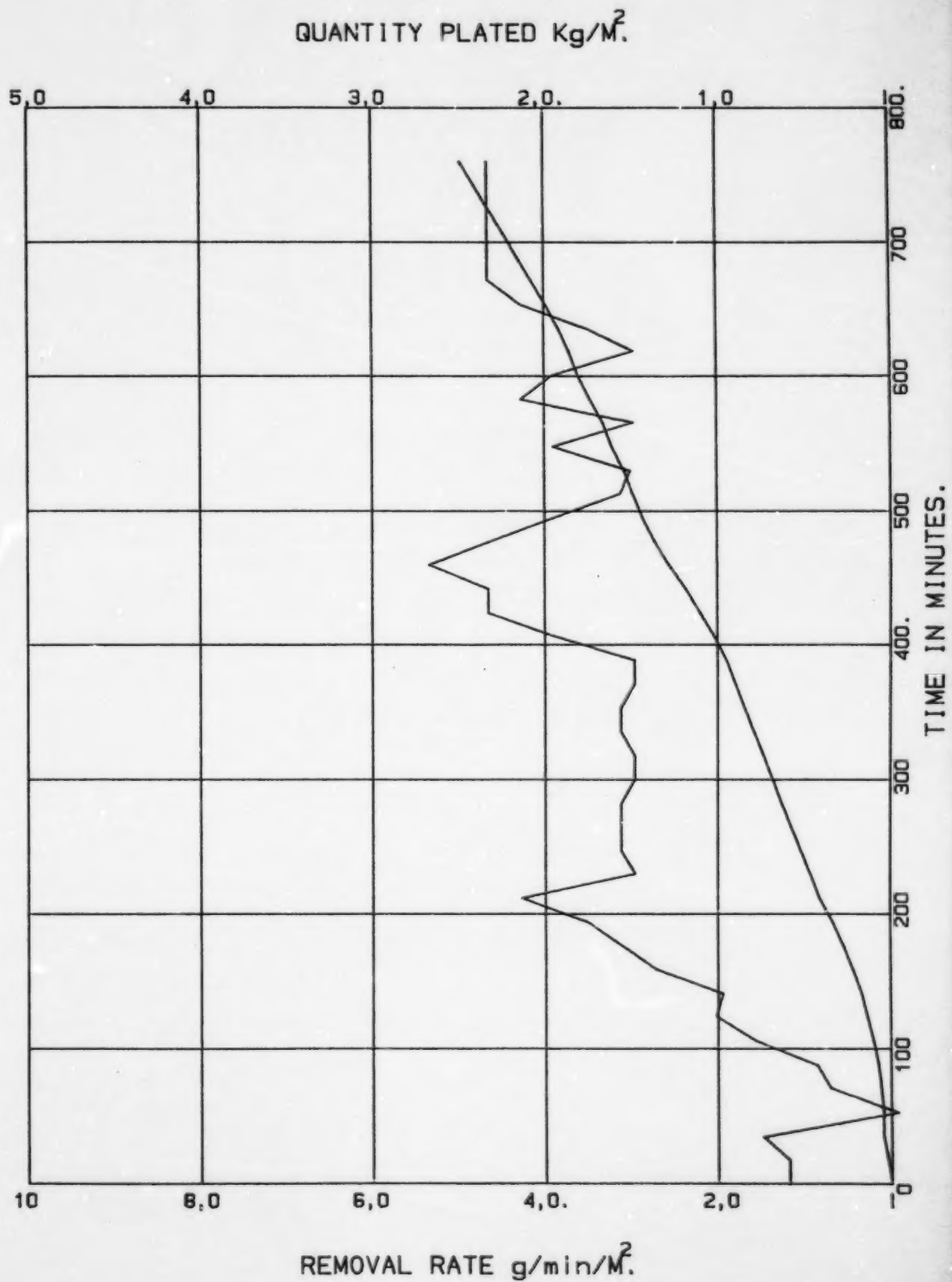
QUANTITY PLATED Kg/M^2



REMOVAL RATE g/min/M^2

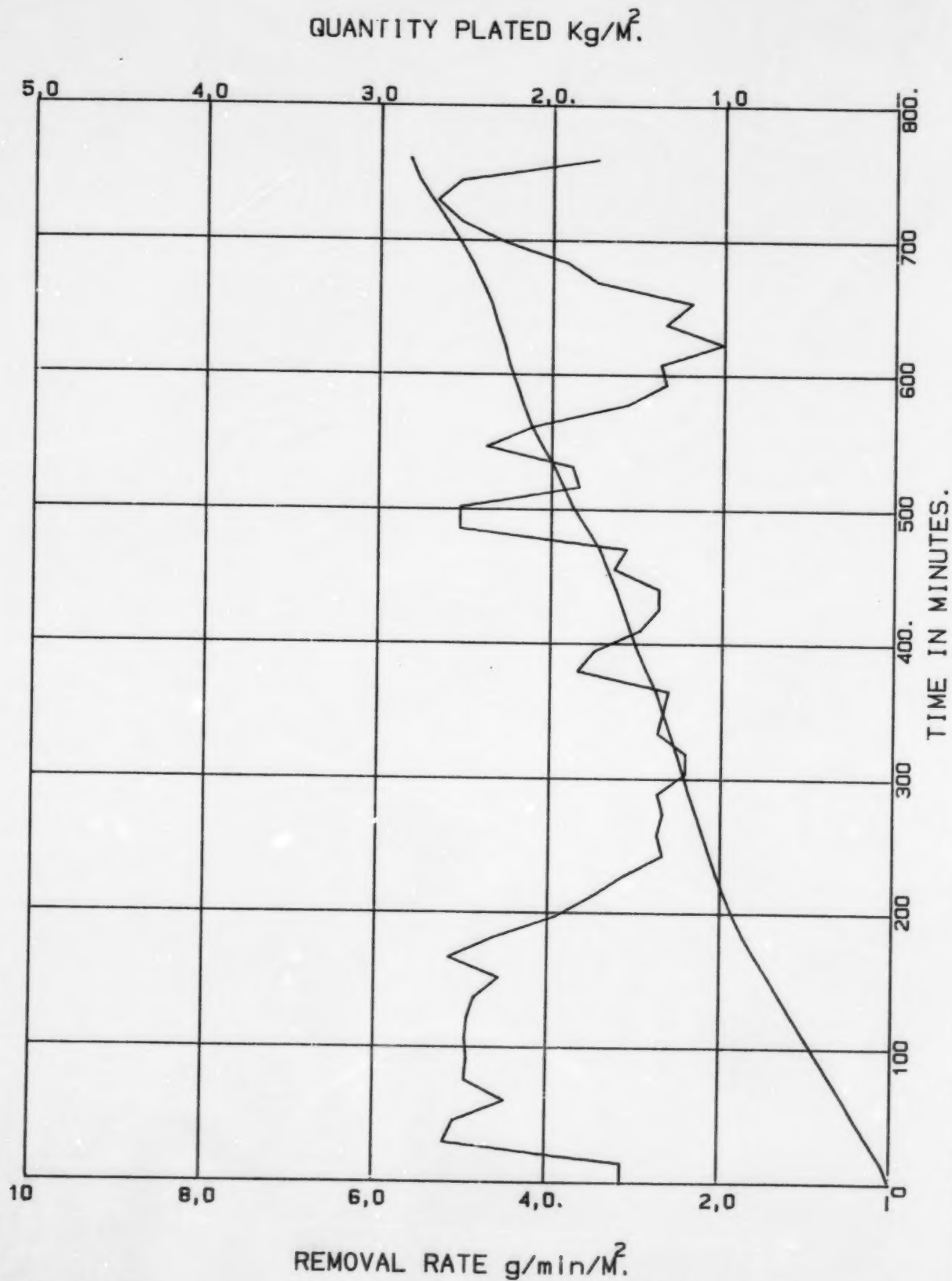
TEST # 22.

CELEC INC.



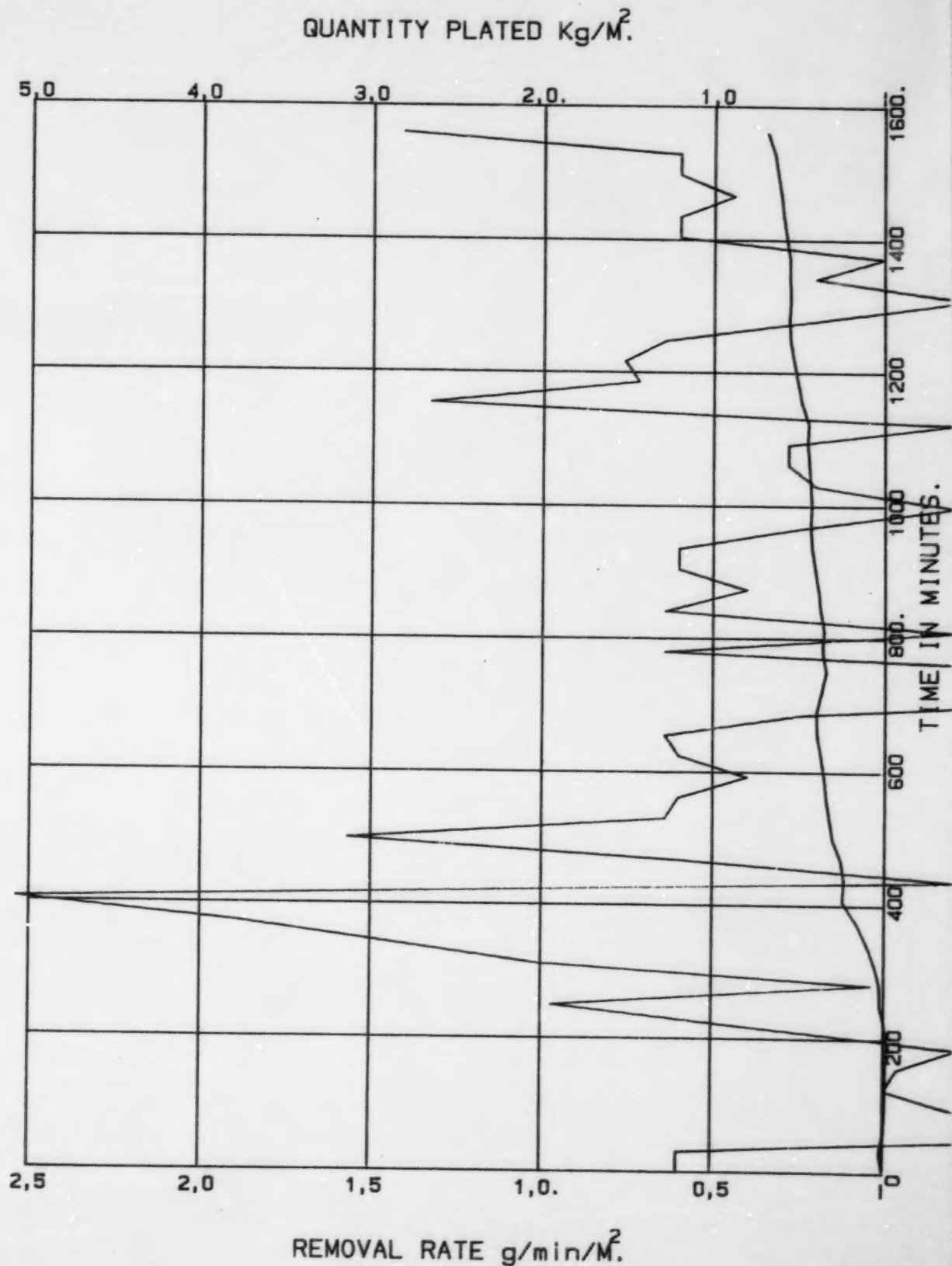
TEST # 23.

CELEC INC.



TEST # 24.

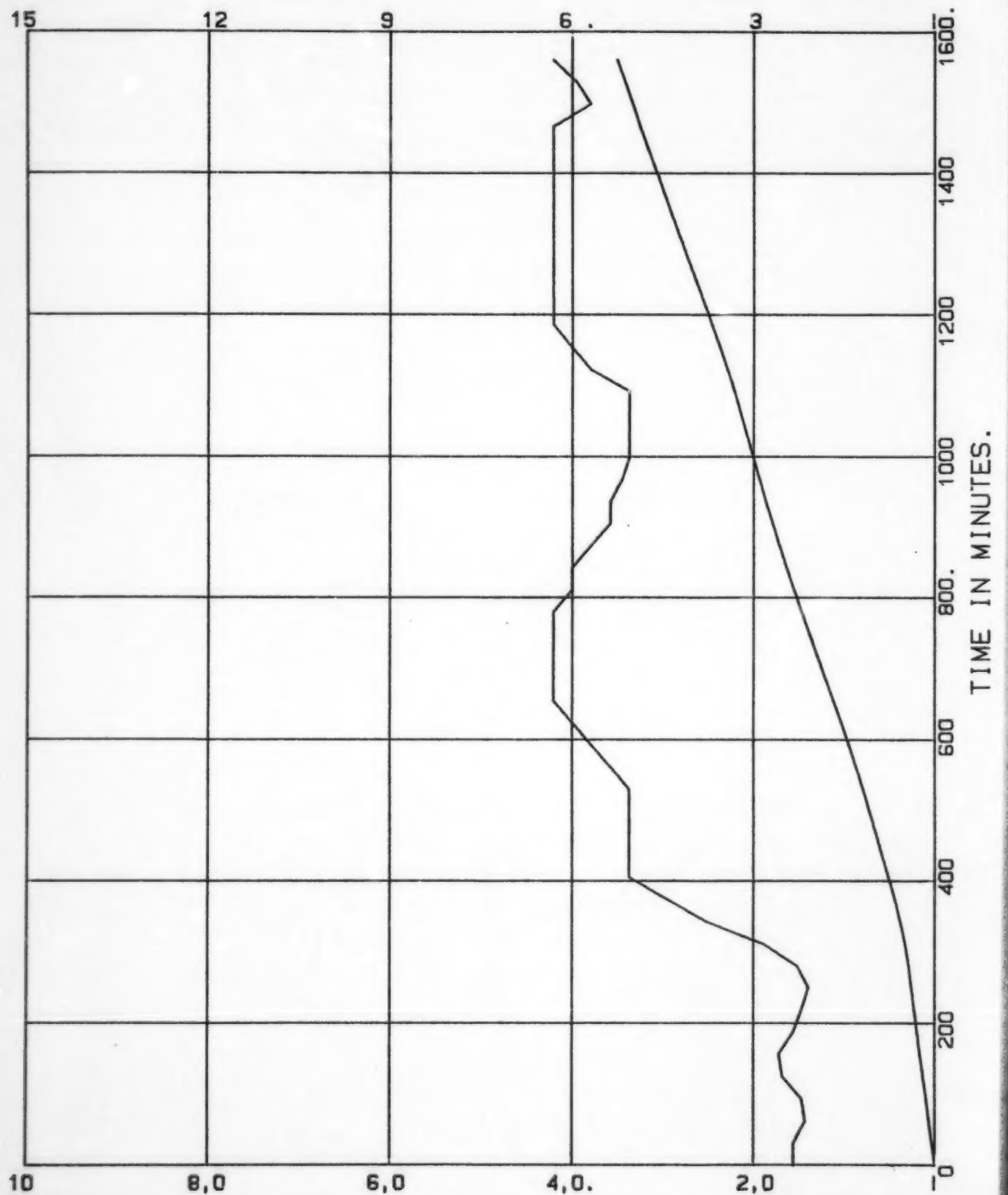
CELEC INC.



TEST # 25.

CELEC INC.

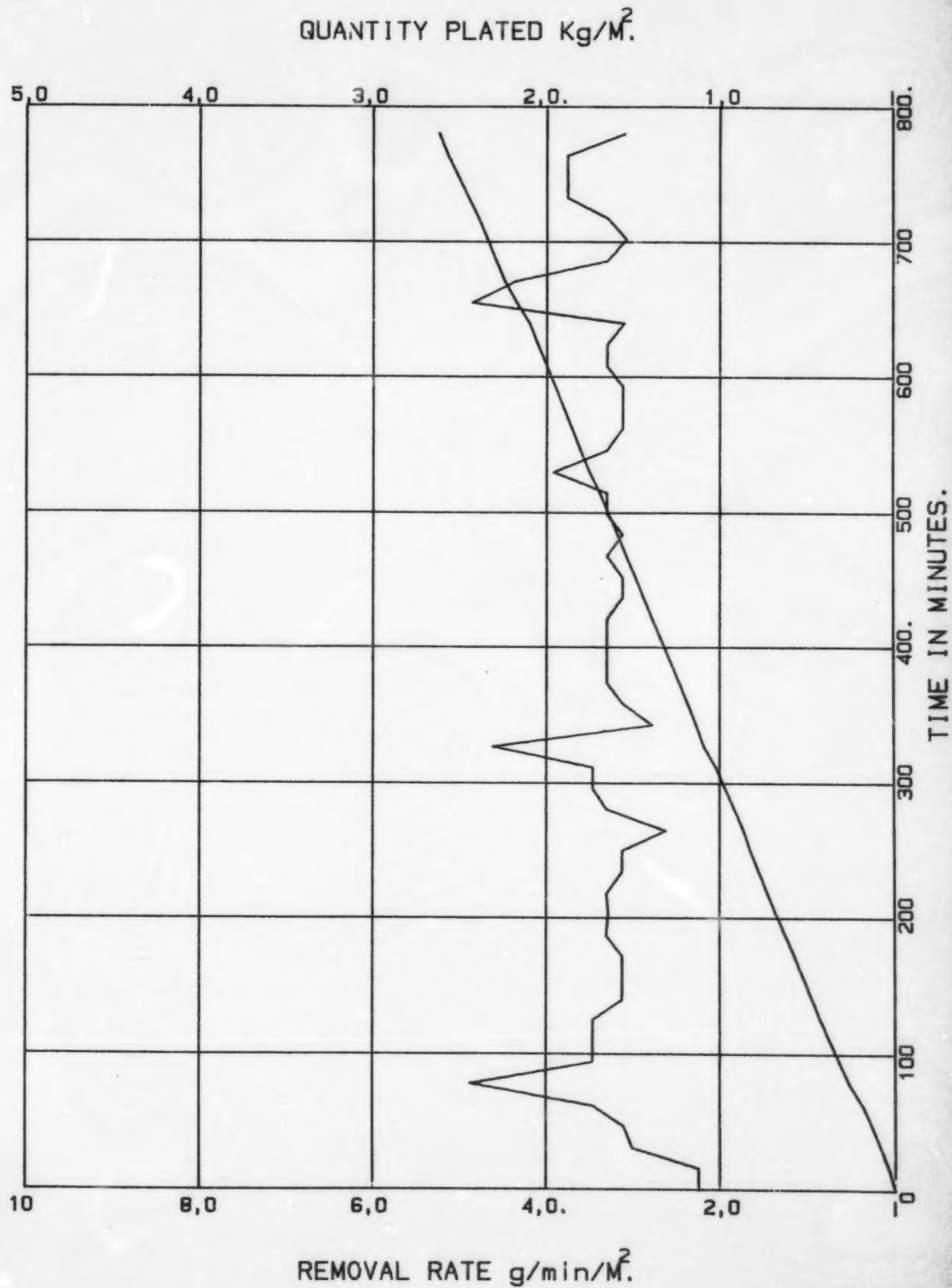
QUANTITY PLATED Kg/M^2 .



REMOVAL RATE g/min/M^2 .

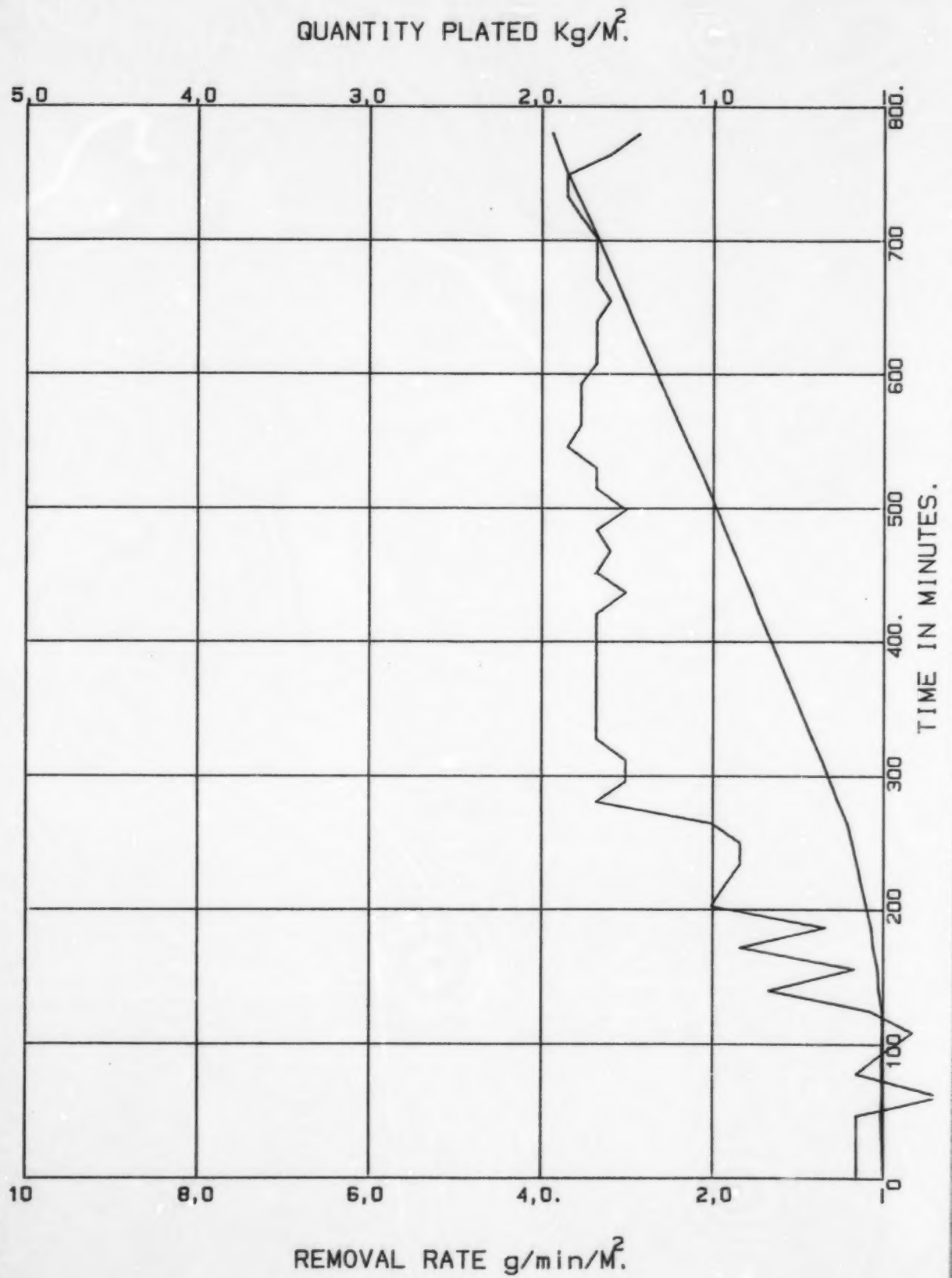
TEST # 26.

CELEC INC.



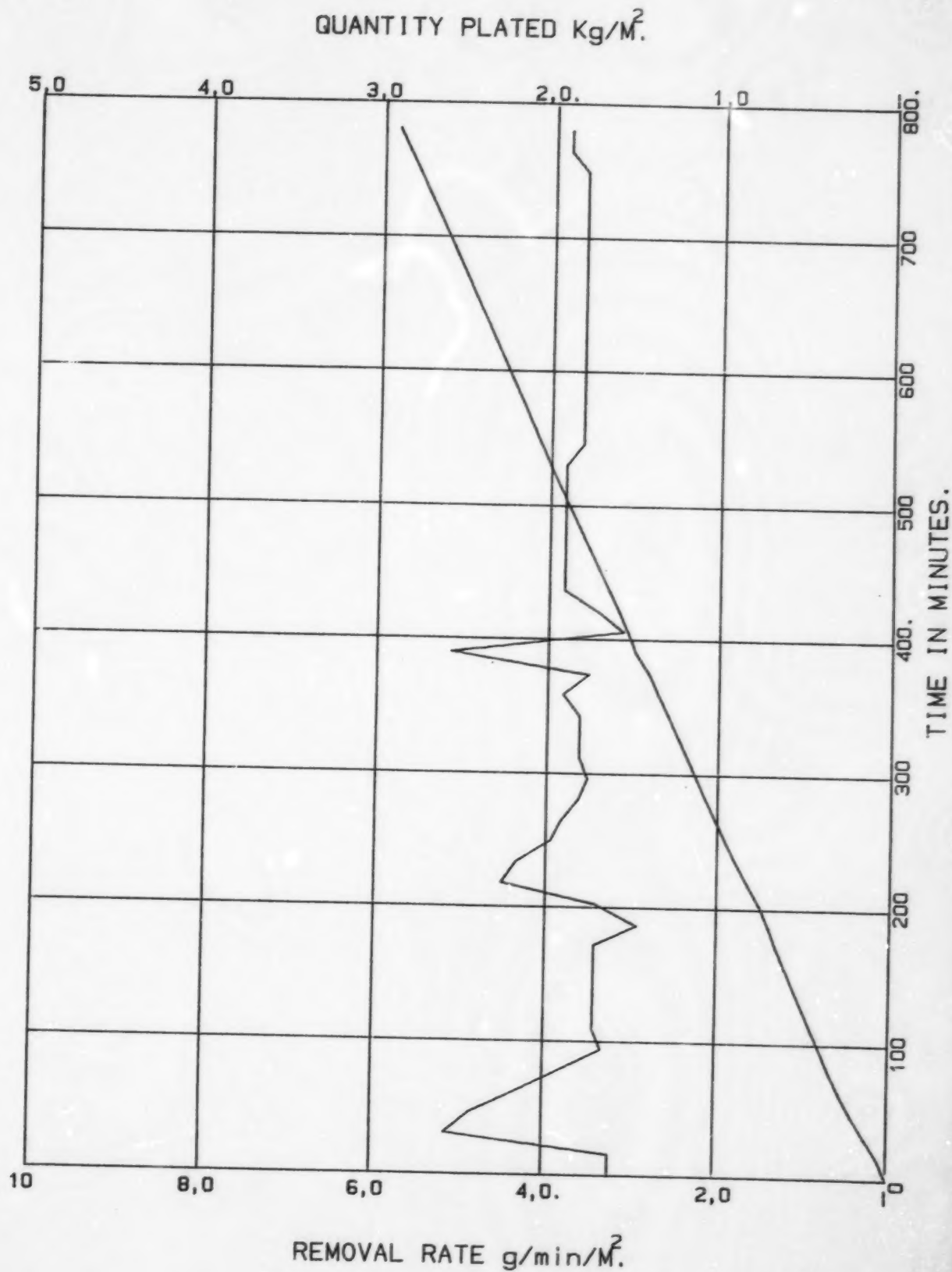
TEST # 27.

CELEC INC.



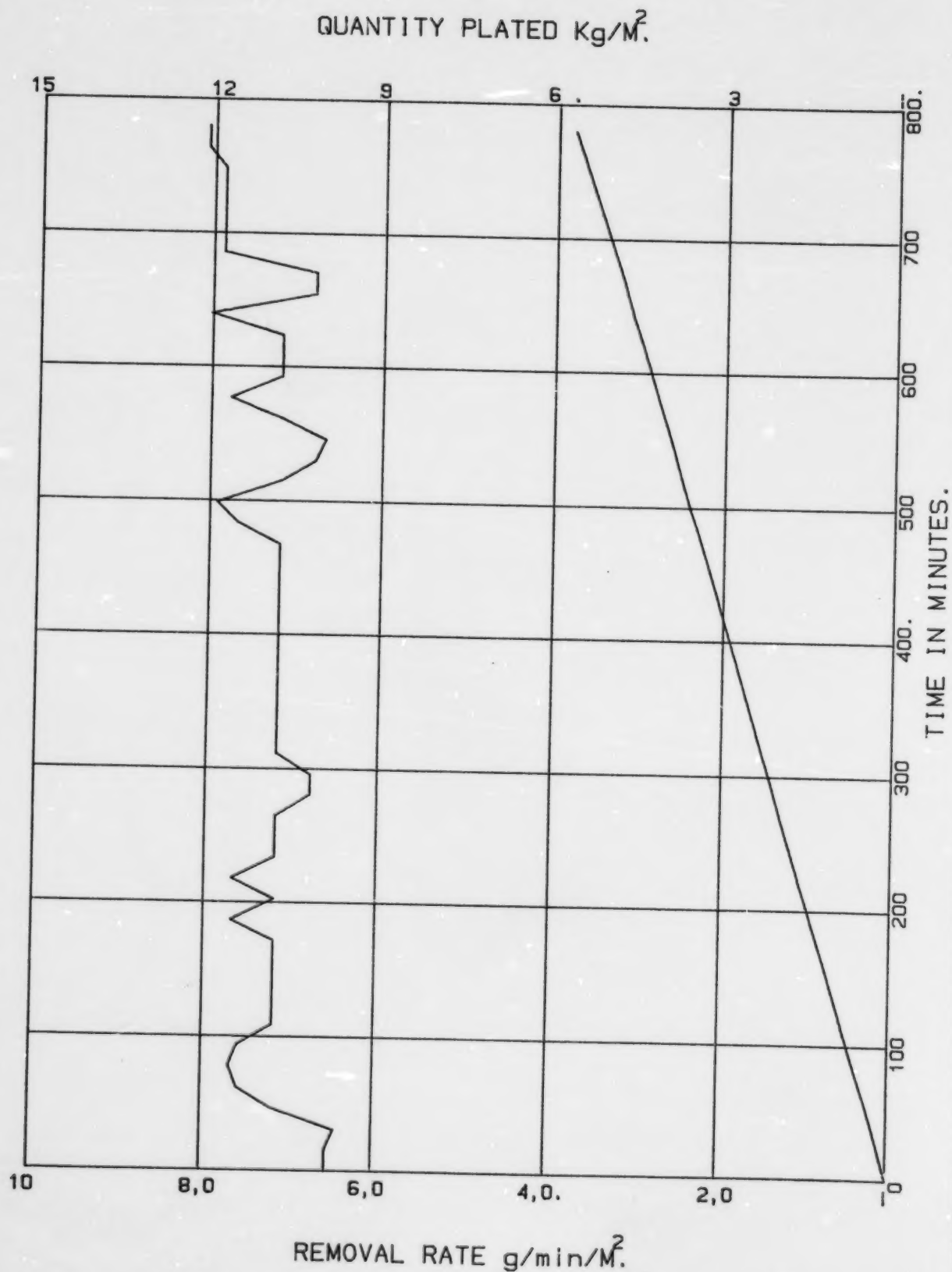
TEST # 28.

CELEC INC.



TEST # 29.

CELEC INC.



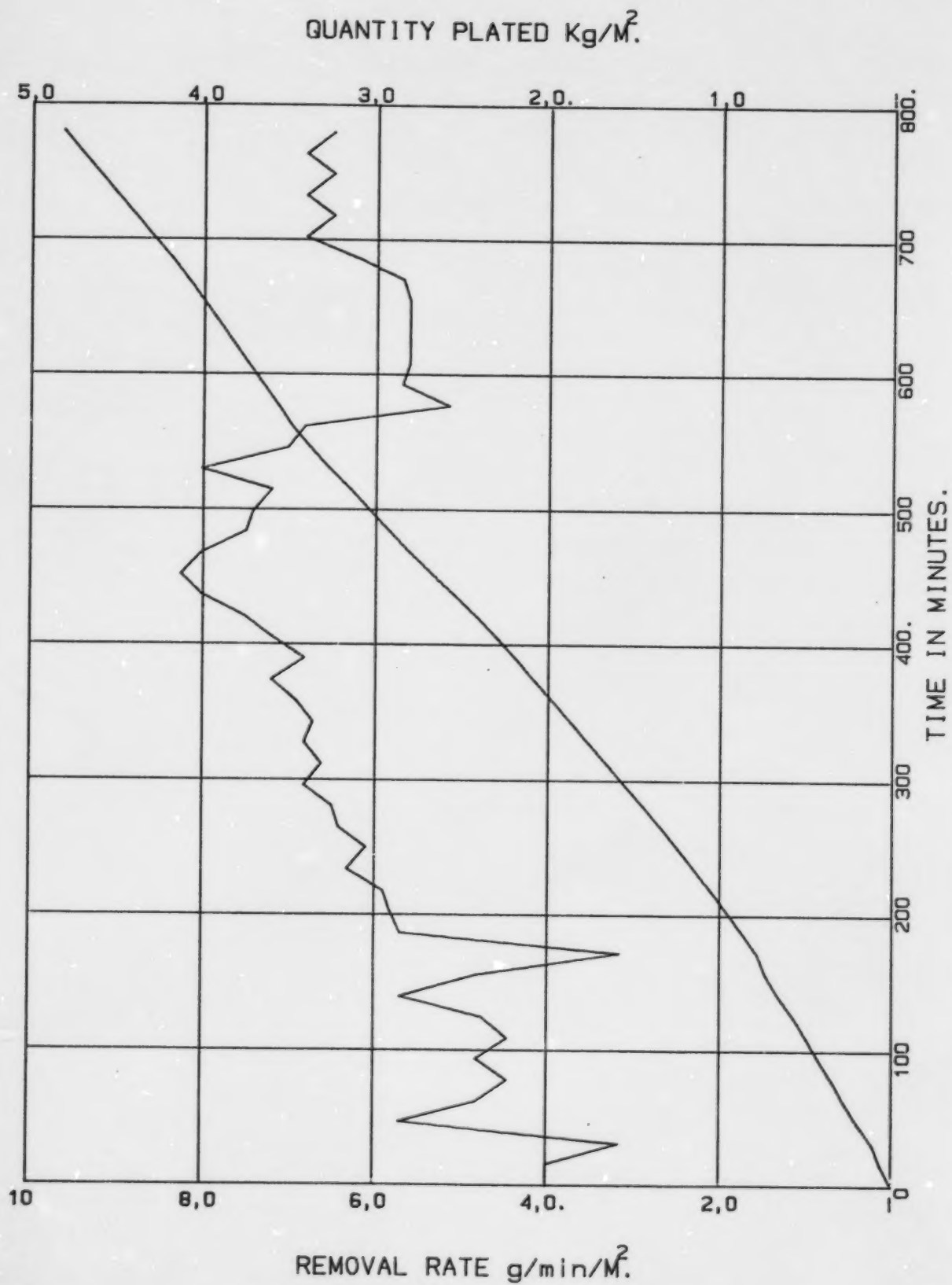
TEST # 30.

CELEC INC.



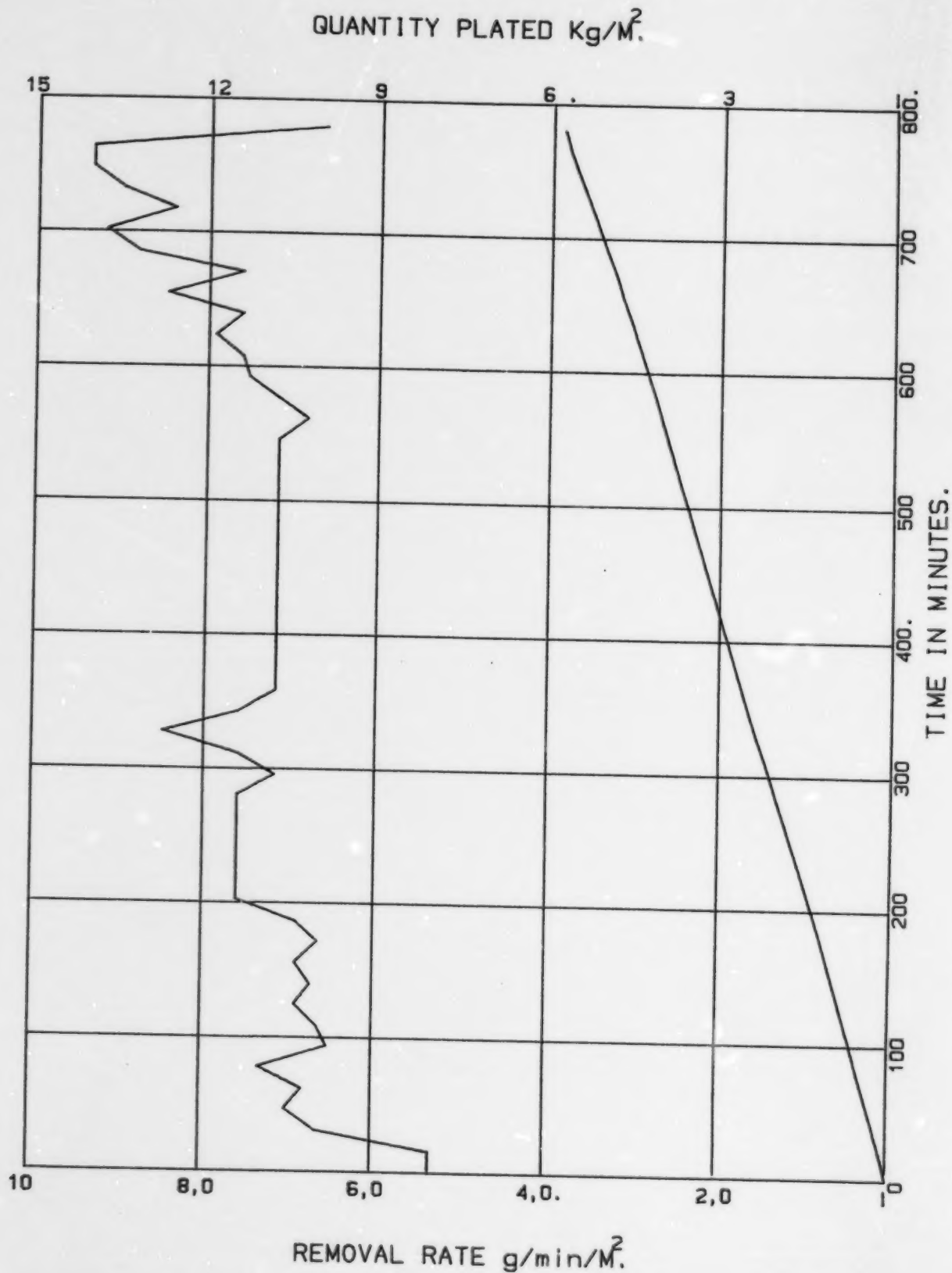
TEST # 31.

CELEC INC.



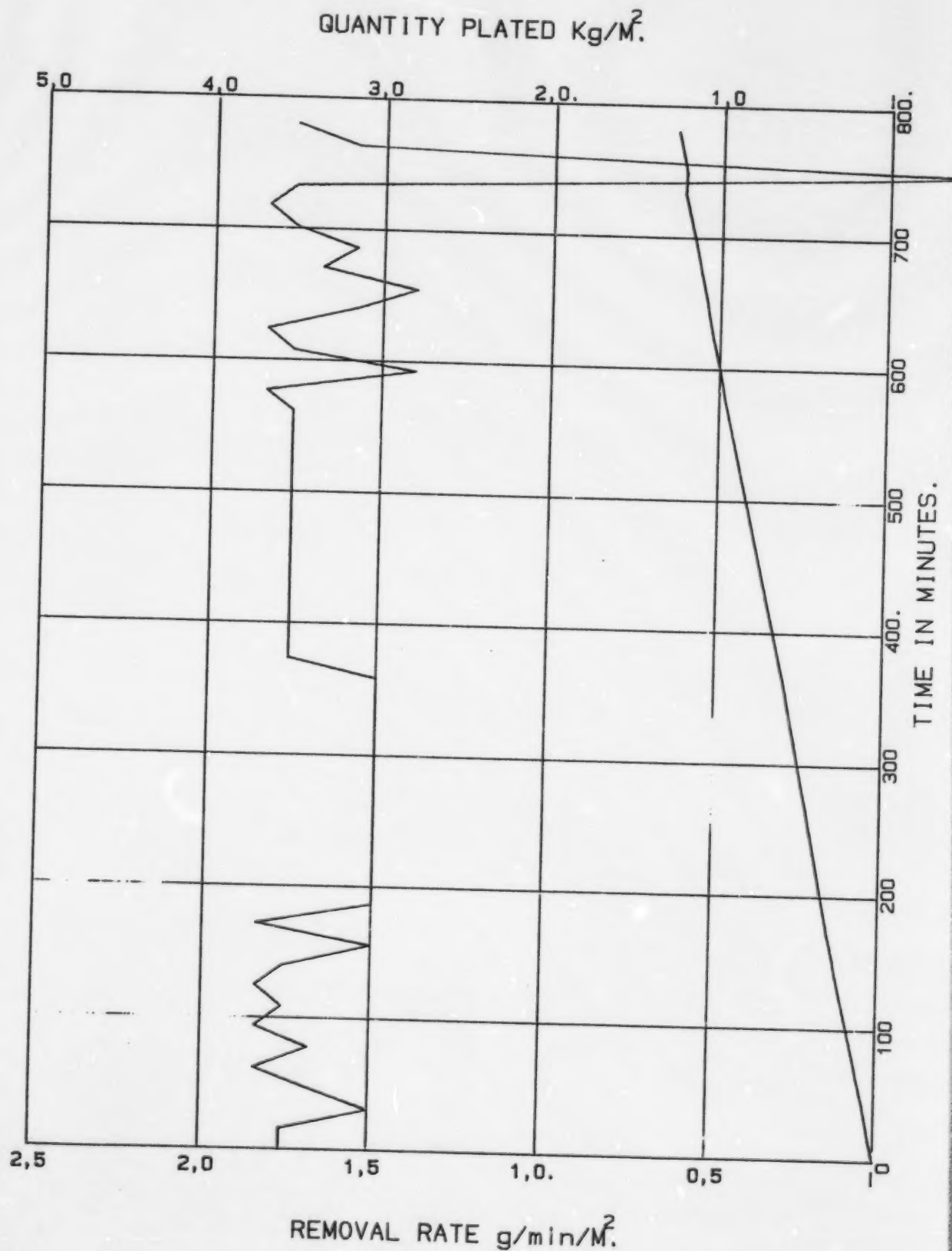
TEST # 32.

CELEC INC.



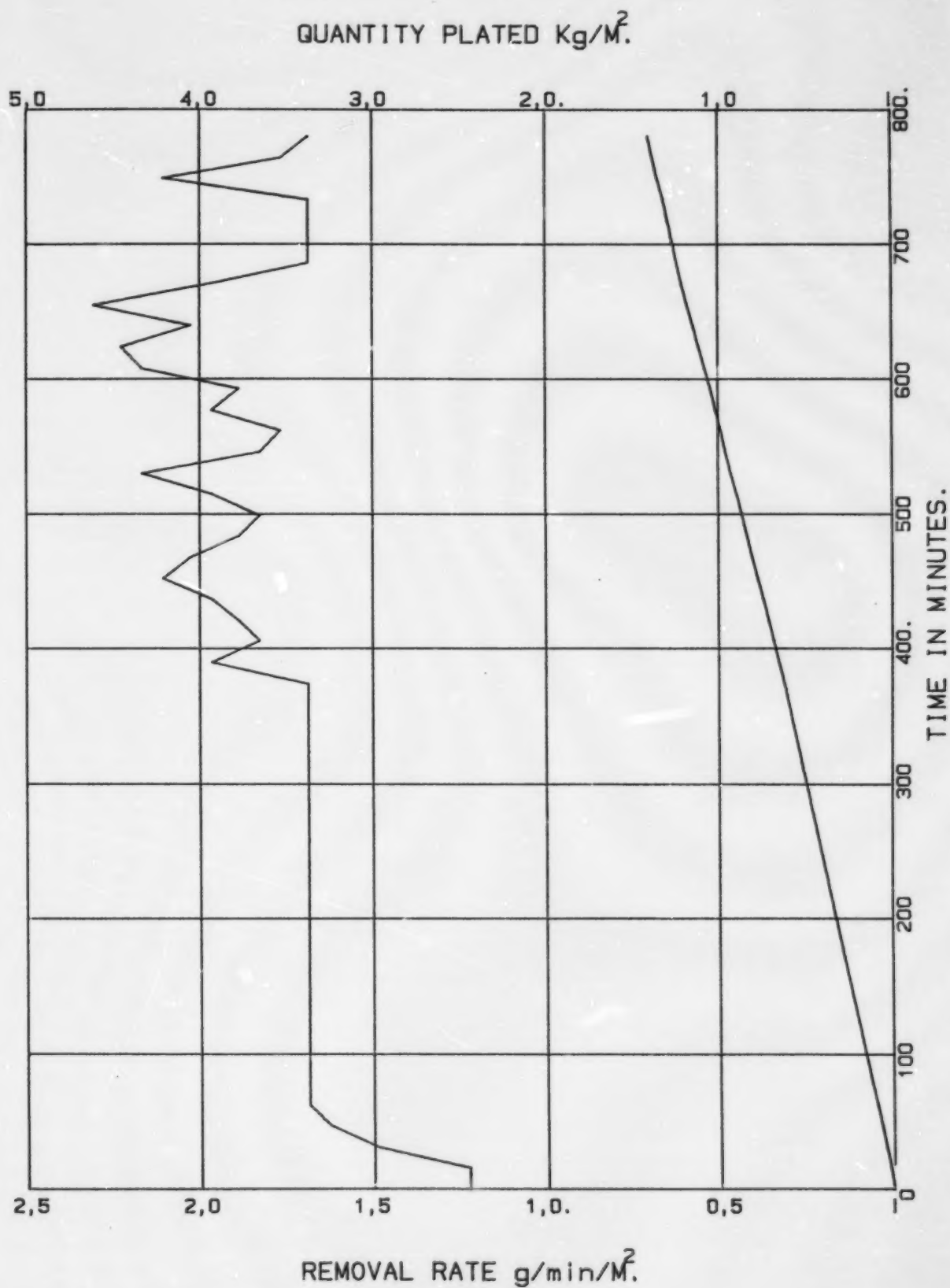
TEST # 33.

CELEC INC.



TEST # 34.

CELEC INC.



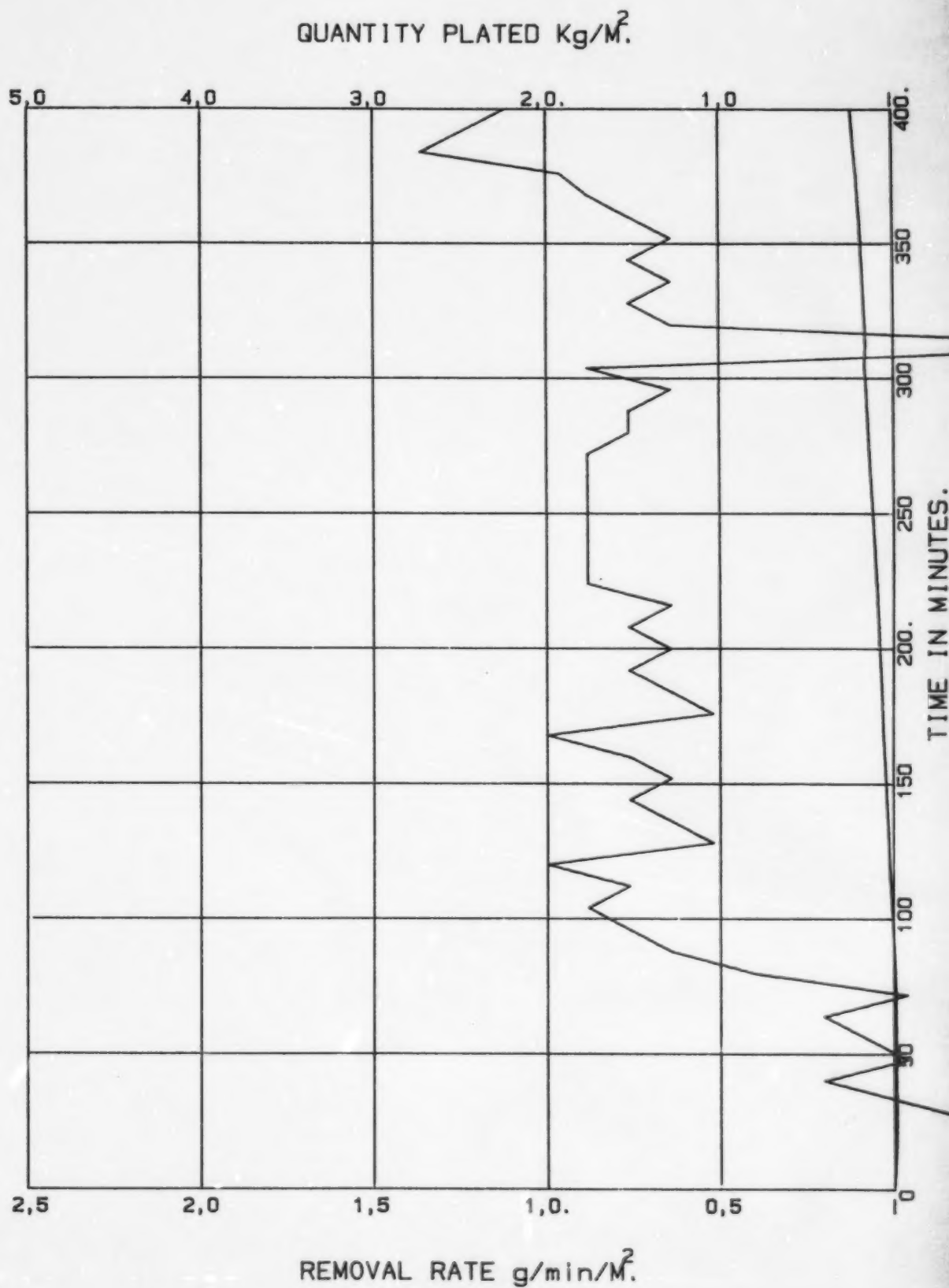
TEST # 35.

CELEC INC.



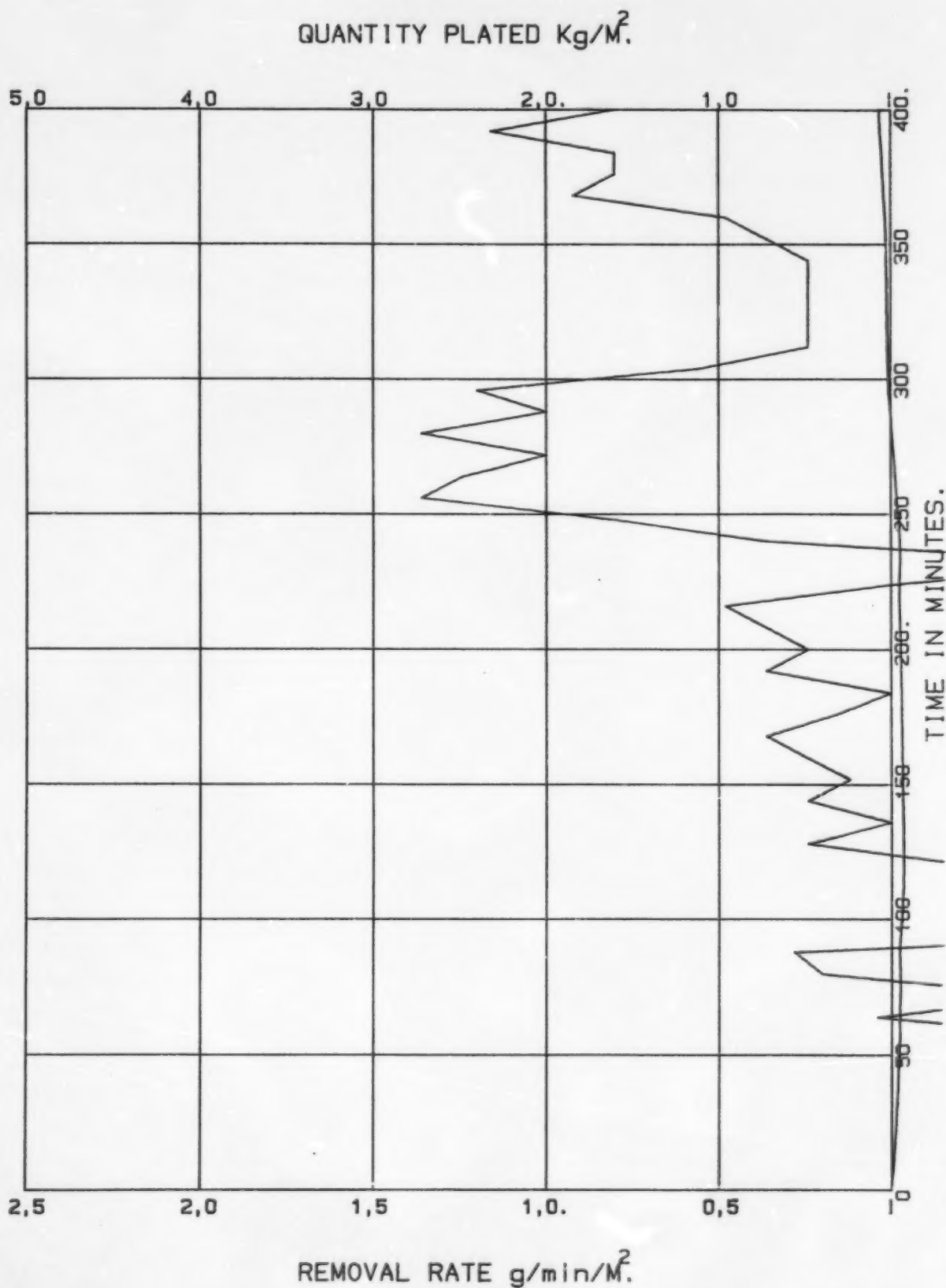
TEST # 36.

CELEC INC.



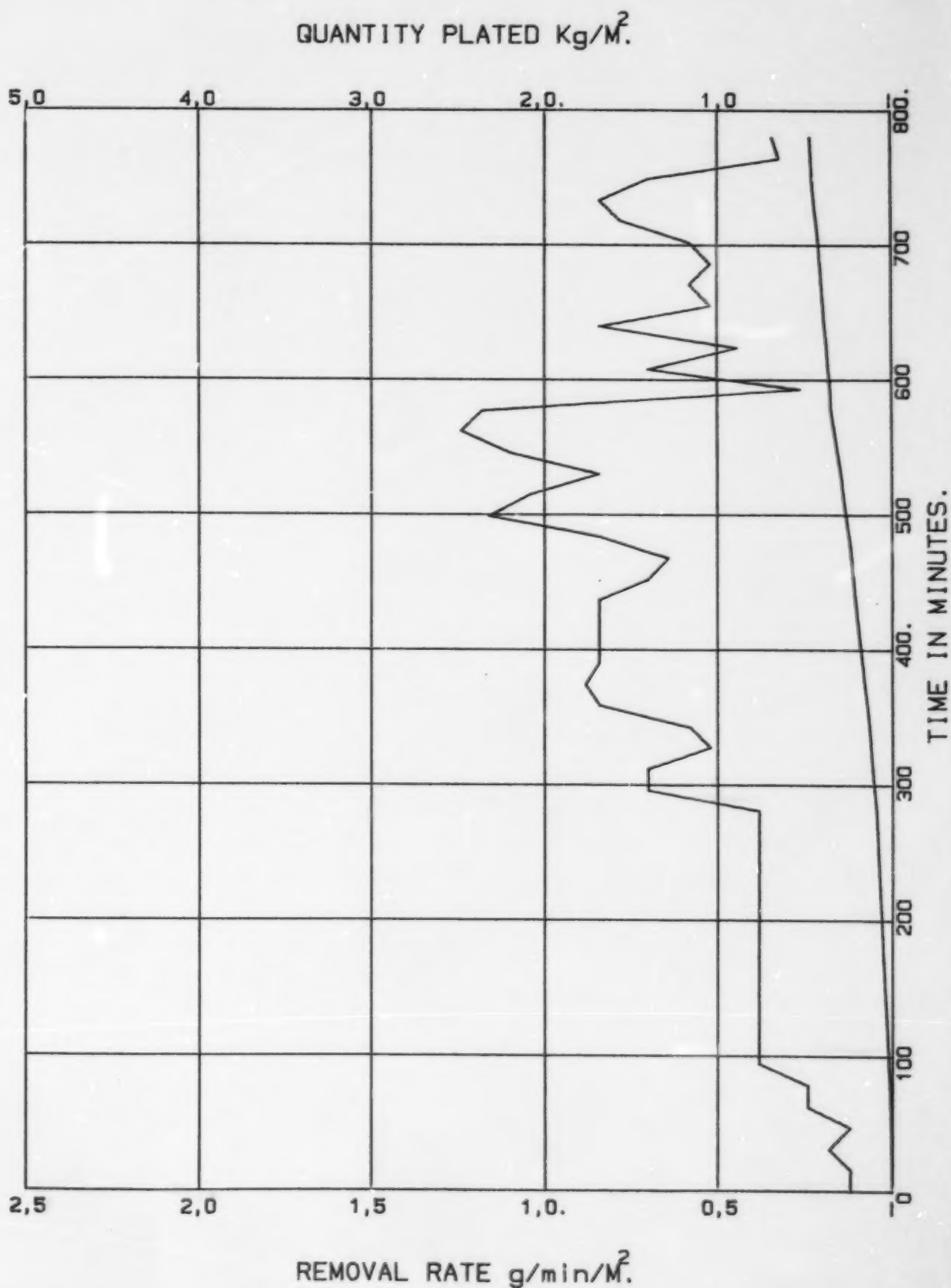
TEST # 37.

CELEC INC.



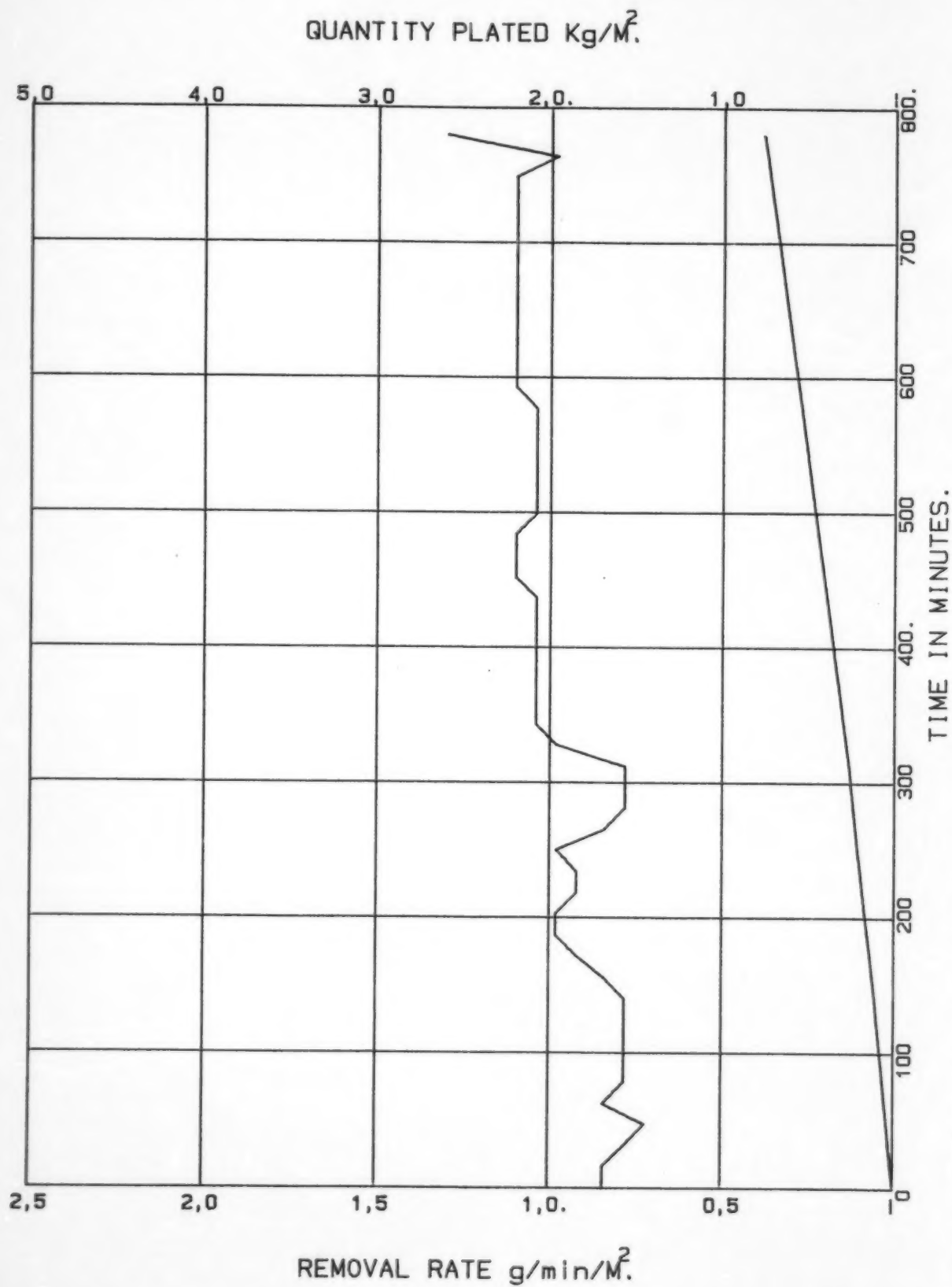
TEST # 38.

CELEC INC.



TEST # 39.

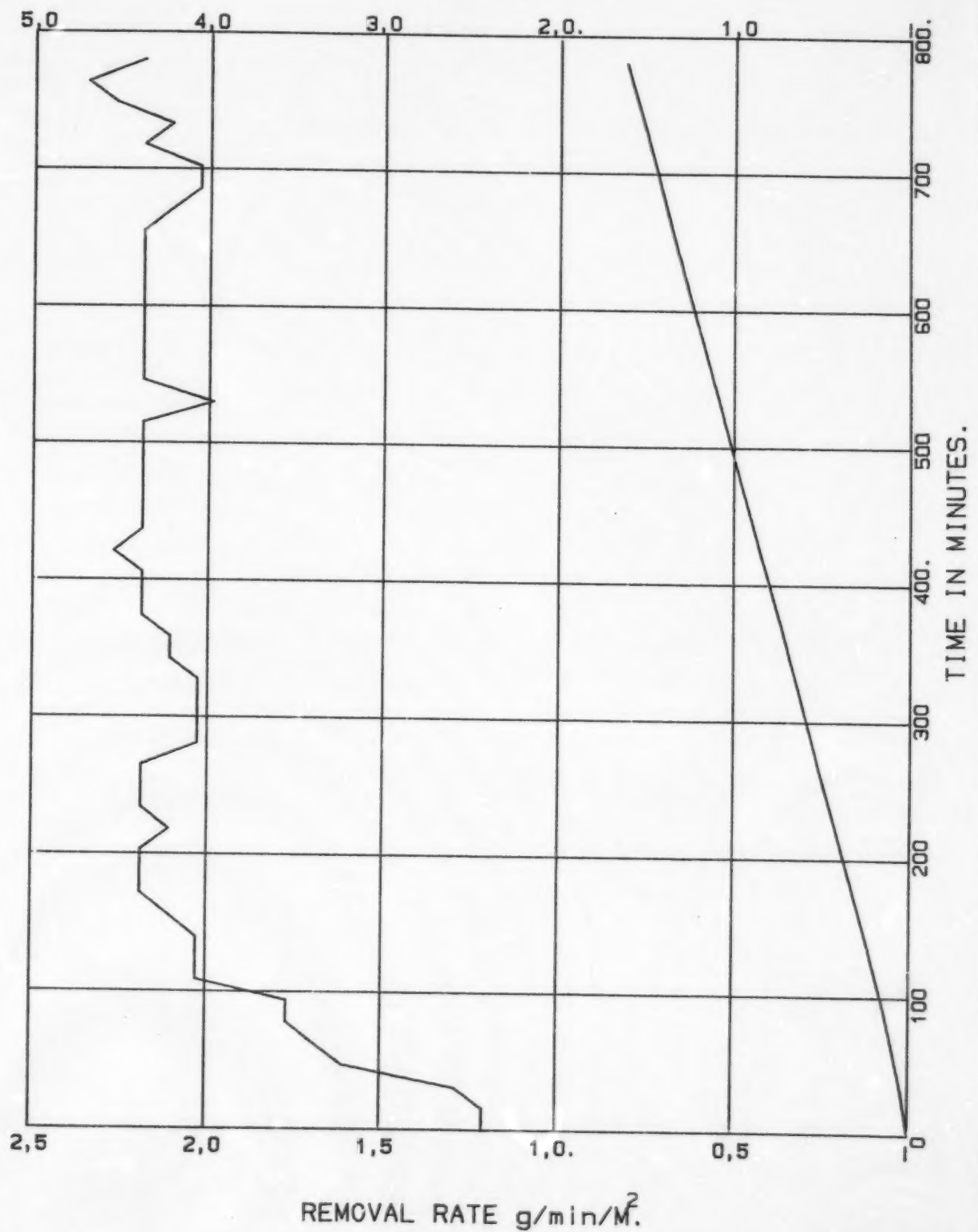
CELEC INC.



TEST # 40.

CELEC INC.

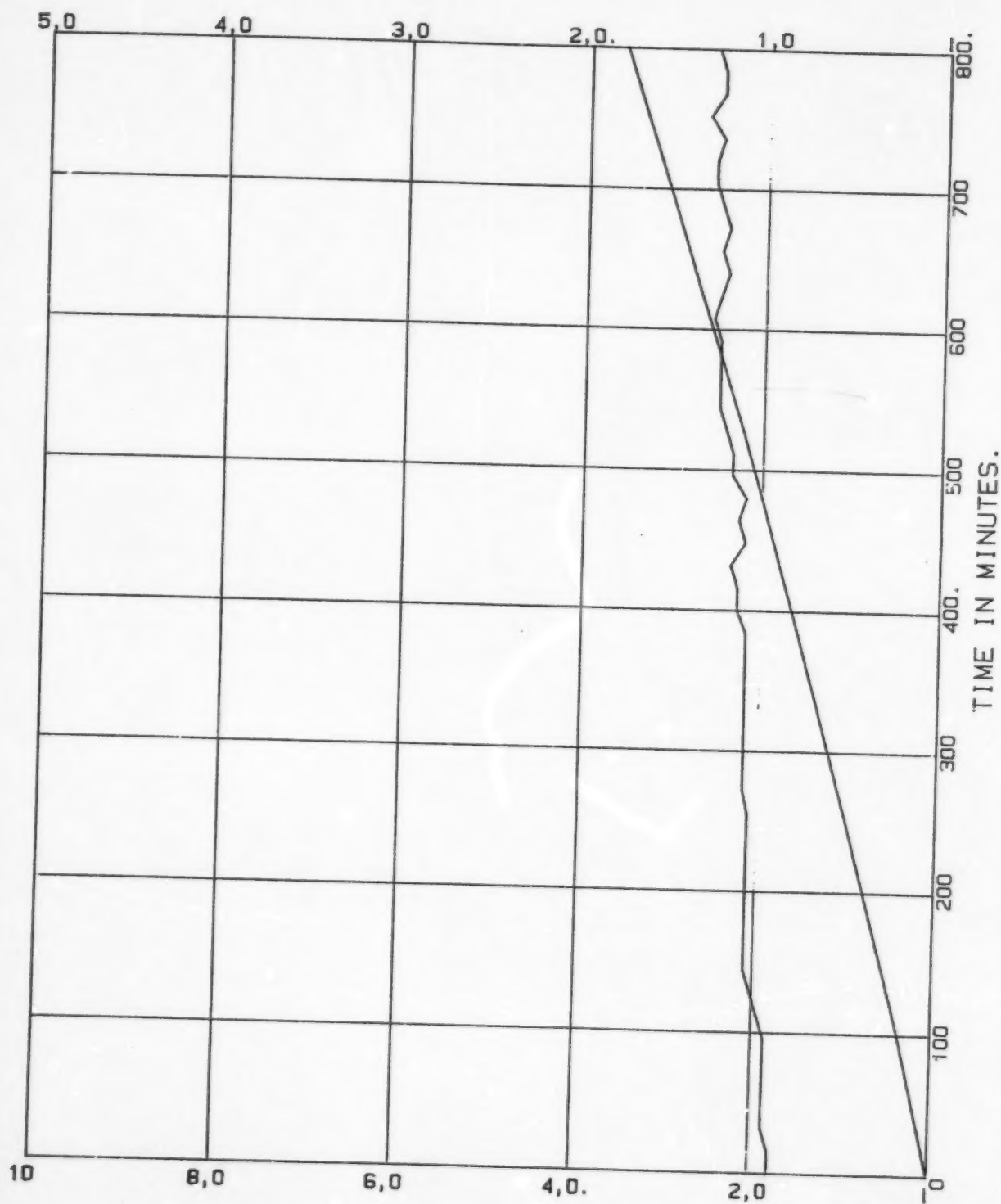
QUANTITY PLATED Kg/M^2 .



TEST # 41.

CELEC INC.

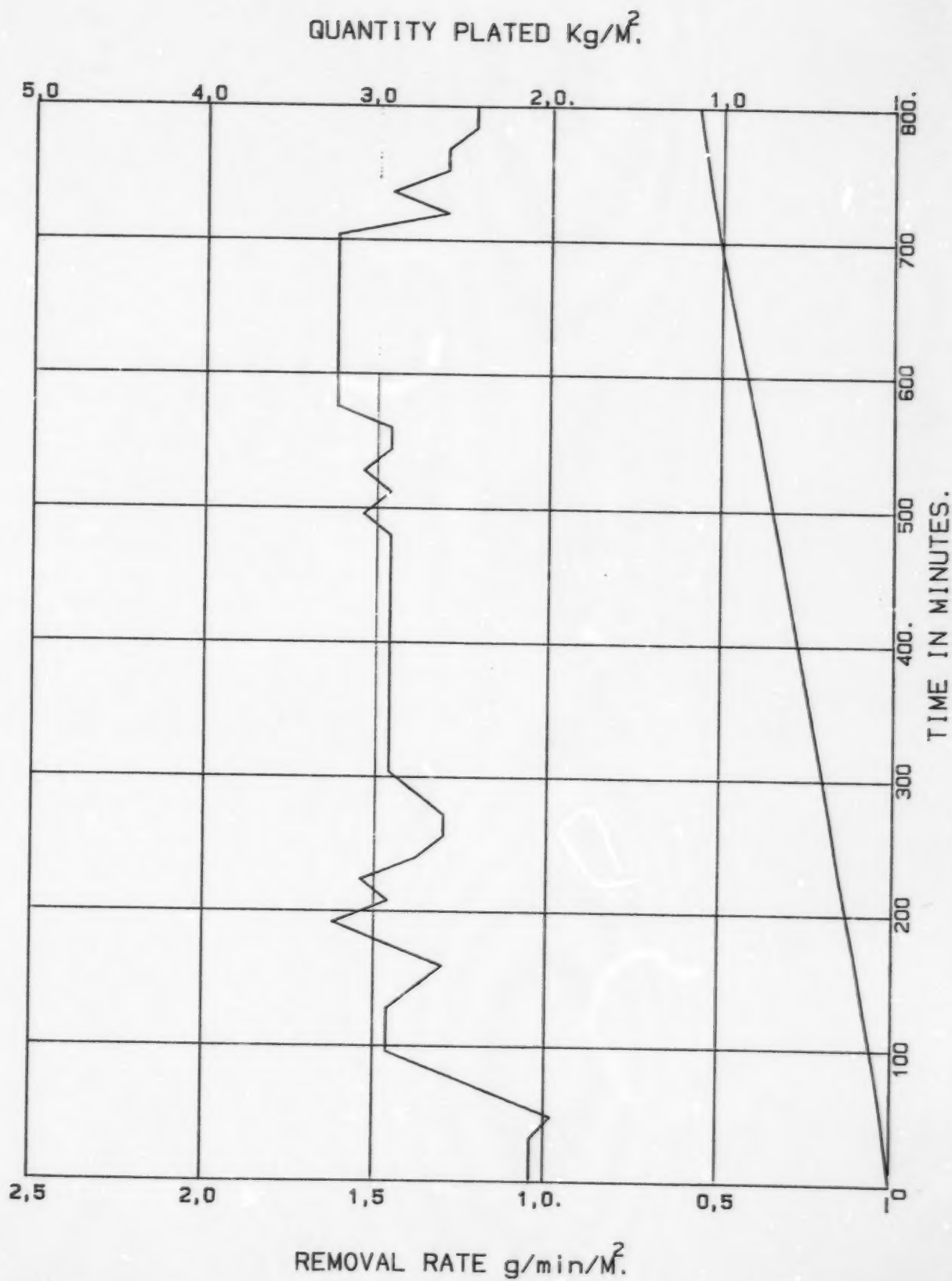
QUANTITY PLATED Kg/M^2



REMOVAL RATE g/min/M^2

TEST # 42.

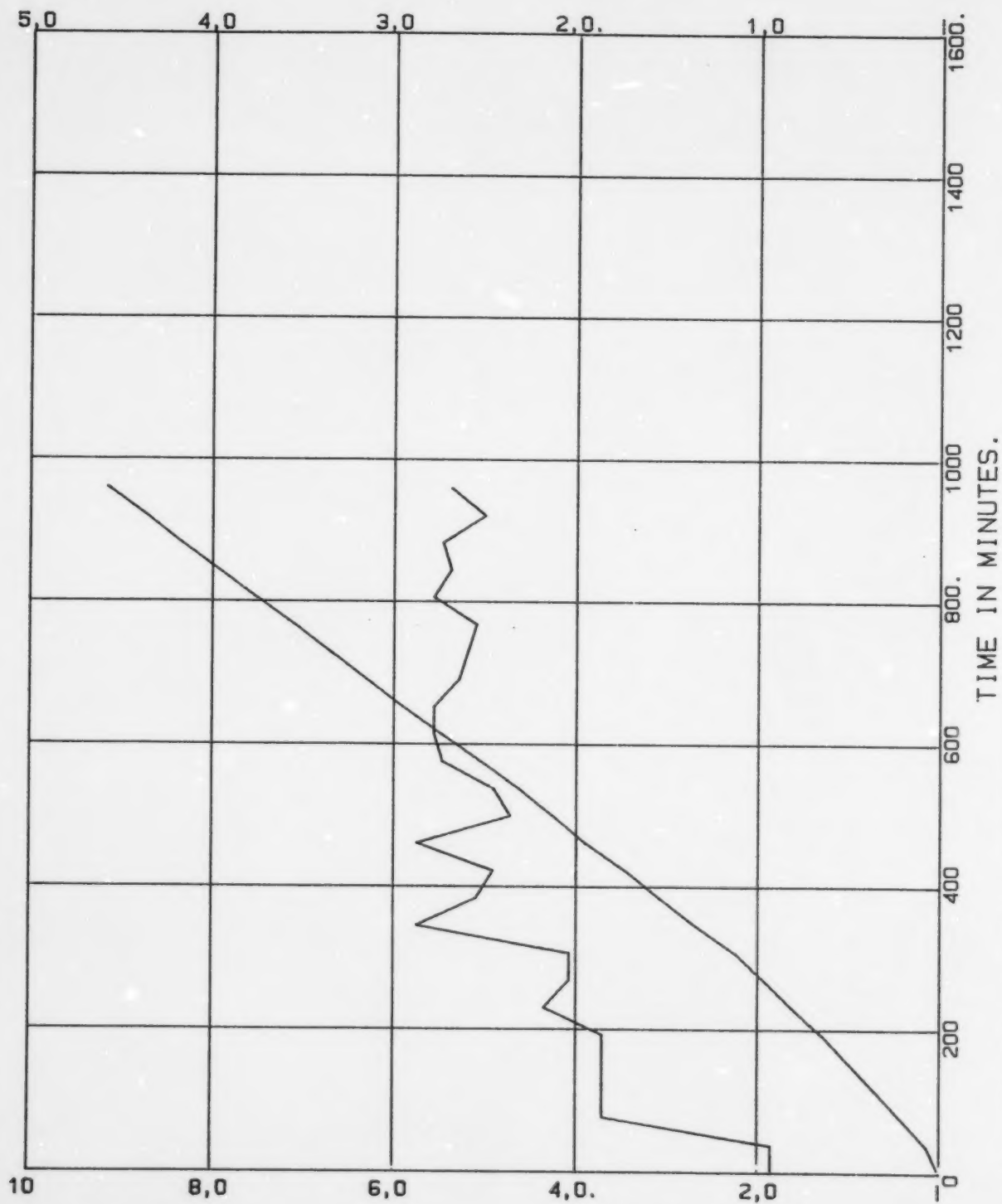
CELEC INC.



TEST # 43.

CELEC INC.

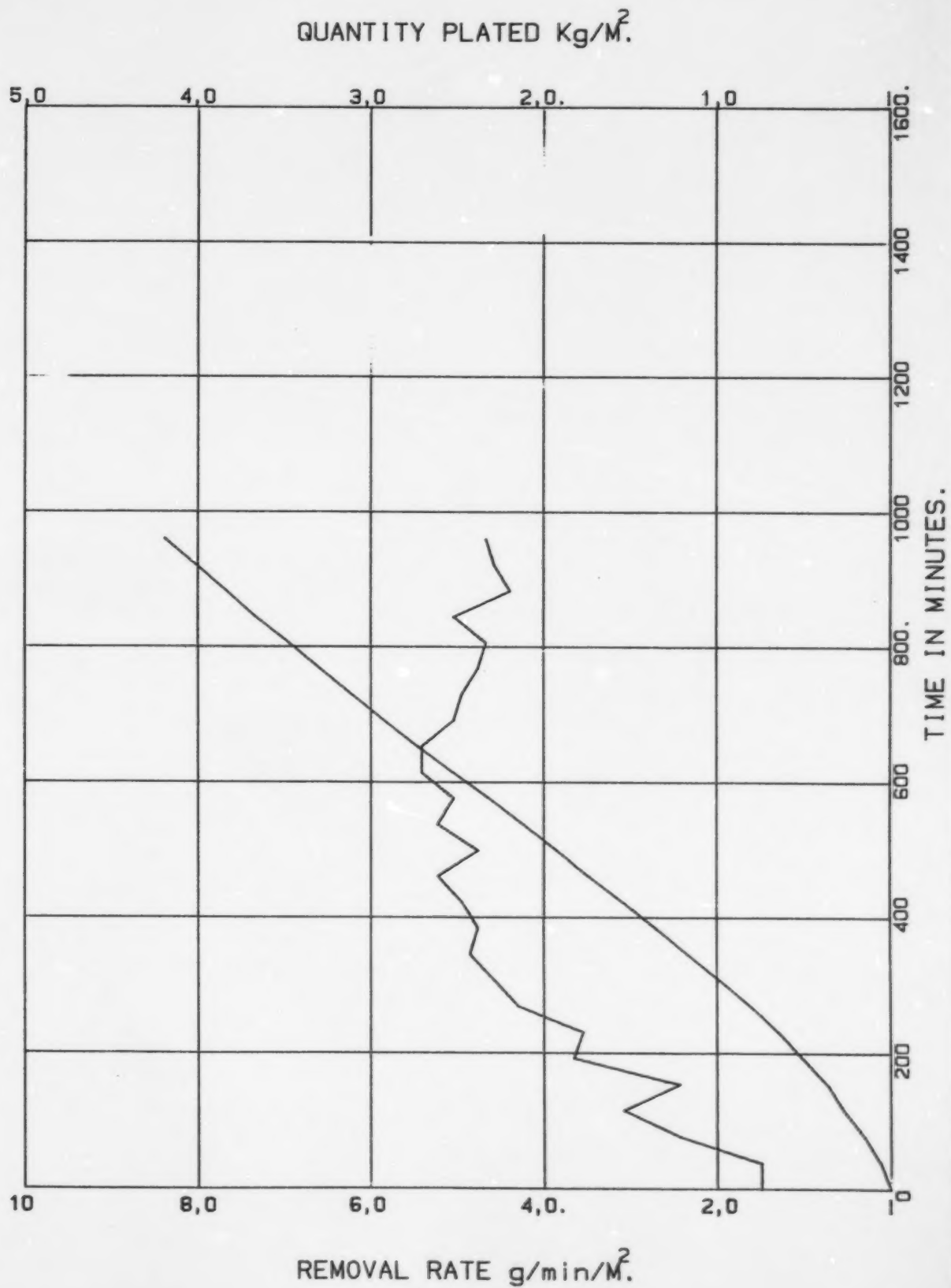
QUANTITY PLATED Kg/M^2



REMOVAL RATE g/min/M^2

TEST # 53.

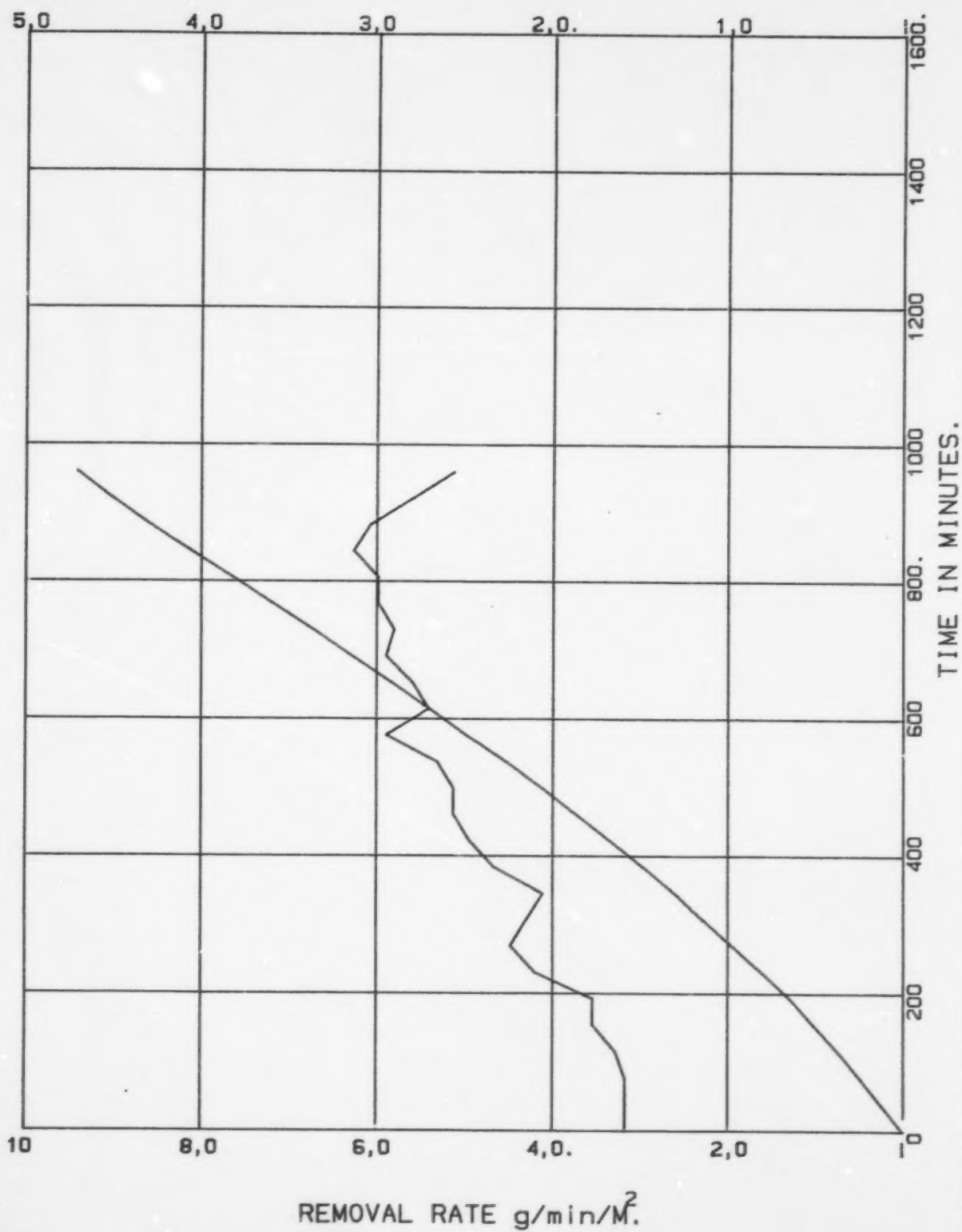
CELEC INC.



TEST # 54.

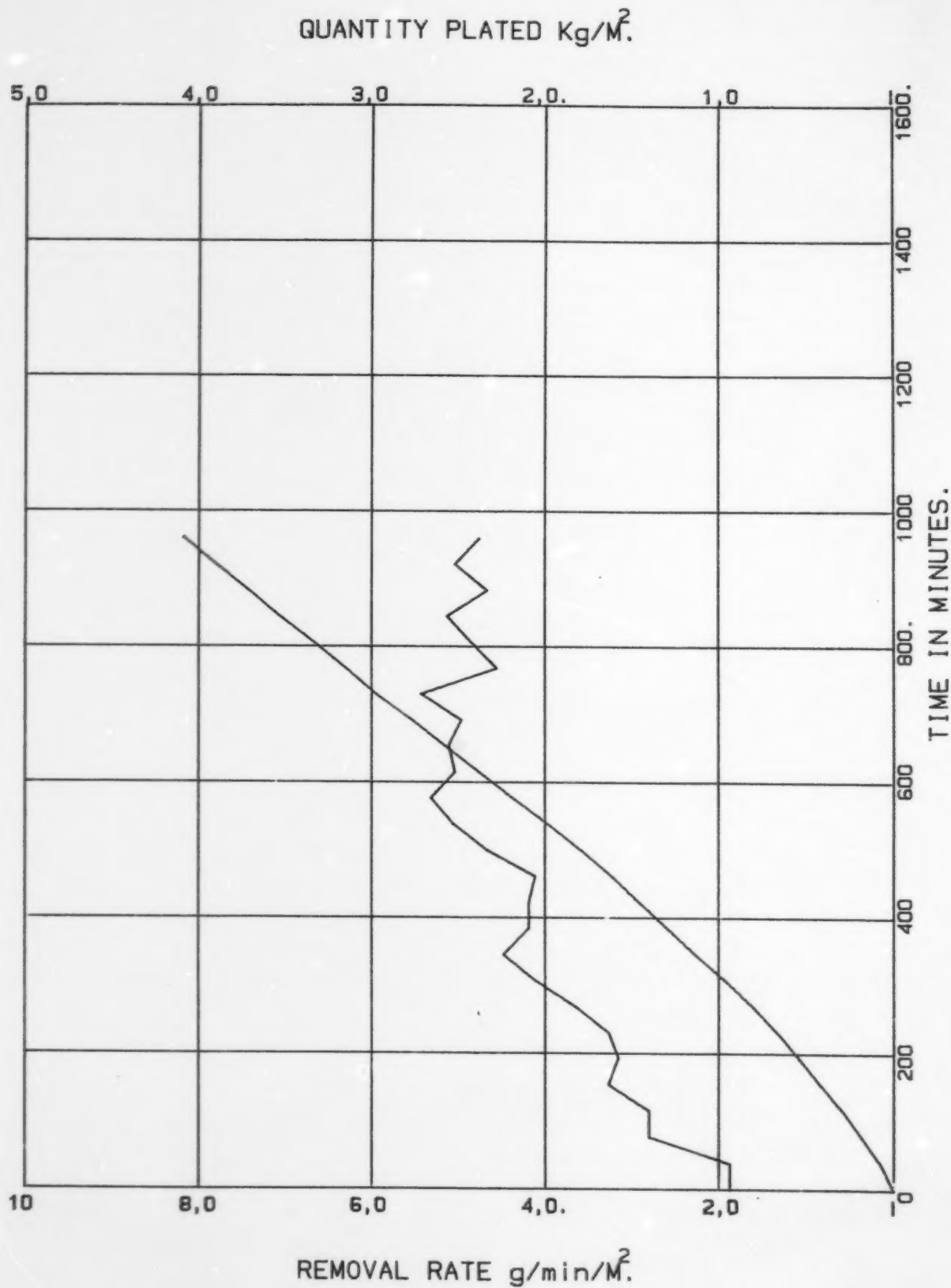
CELEC INC.

QUANTITY PLATED Kg/M^2



TEST # 55.

CELEC INC.



TEST # 56.

CELEC INC.